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Wellhead Protection Plan
Part I
Wellhead Protection Area Delineation
Drinking Water Supply Management Area Delineation
Well and Drinking Water Supply Management Area Vulnerability Assessments
For
City of Foley

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Gail Haglund, P.G., Hydrologist
Amal M. Djerrari, P.E., Hydrologist
Source Water Protection Unit

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Glossary of Terms

Data Element. A specific type of information required by the Minnesota Department of Health to prepare a wellhead protection plan.

Drinking Water Supply Management Area (DWSMA). The area delineated using identifiable land marks that reflects the scientifically calculated wellhead protection area boundaries as closely as possible (Minnesota Rules, part 4720.5100, subpart 13).

Drinking Water Supply Management Area Vulnerability. An assessment of the likelihood that the aquifer within the DWSMA is subject to impact from land and water uses within the wellhead protection area. It is based upon criteria that are specified under Minnesota Rules, part 4720.5210, subpart 3.

Emergency Response Area (ERA). The part of the wellhead protection area that is defined by a one-year time of travel within the aquifer that is used by the public water supply well (Minnesota Rules, part 4720.5250, subpart 3). It is used to set priorities for managing potential contamination sources within the DWSMA.

Inner Wellhead Management Zone (IWMZ). The land that is within 200 feet of a public water supply well (Minnesota Rules, part 4720.5100, subpart 19). The public water supplier must manage the IWMZ to help protect it from sources of pathogen or chemical contamination that may cause an acute health effect.

Multi-Layer Analytic Element Model (MLAEM). An analytic element modeling code capable of simulating complex groundwater flow processes, including the influence of vertical infiltration and the pumping influences of multiple high-capacity wells (Strack, 1989). The code can also simulate simplified uniform flow conditions when necessary.

Wellhead Protection (WHP). A method of preventing well contamination by effectively managing potential contamination sources in all or a portion of the well's recharge area.

Wellhead Protection Area (WHPA). The surface and subsurface area surrounding a well or well field that supplies a public water system, through which contaminants are likely to move toward and reach the well or well field (Minnesota Statutes, section 103I.005, subdivision 24).

Well Vulnerability. An assessment of the likelihood that a well is at risk to human-caused contamination, either due to its construction or indicated by criteria that are specified under Minnesota Rules, part 4720.5550, subpart 2.

Acronyms

CWI - County Well Index

DNR - Minnesota Department of Natural Resources

EPA - United States Environmental Protection Agency

FSA - Farm Security Administration

MDA - Minnesota Department of Agriculture

MDH - Minnesota Department of Health

MGS - Minnesota Geological Survey

MnDOT - Minnesota Department of Transportation

MnGEO - Minnesota Geospatial Information Office

MPCA - Minnesota Pollution Control Agency

NRCS - Natural Resource Conservation Service

SWCD - Soil and Water Conservation District

UMN - University of Minnesota

USDA - United States Department of Agriculture

USGS - United States Geological Survey

Introduction

The Minnesota Department of Health (MDH) developed Part I of the wellhead protection (WHP) plan at the request of the city of Foley (PWSID 1050001). The work was performed in accordance with the Minnesota Wellhead Protection Rule, parts 4720.5100 to 4720.5590.

This report presents delineations of the wellhead protection area (WHPA) and drinking water supply management area (DWSMA), and the vulnerability assessments for the public water supply wells and DWSMA. Figure 1 shows the boundaries for the WHPA and the DWSMA. The WHPA is defined by a 10-year time of travel. Figure 1 also shows the emergency response area (ERA), which is defined by a one-year time of travel. Definitions of rule-specific terms that are used are provided in the “Glossary of Terms.”

This report also documents the technical information that was required to prepare this portion of the WHP plan in accordance with the Minnesota Wellhead Protection Rule. Additional technical information is available from MDH.

The wells included in the WHP plan are listed in **Table 1**.

Table 1 - Water Supply Well Information

Local Well ID	Unique Number	Use/ Status ¹	Casing Diameter (inches)	Casing Depth (feet)	Well Depth (feet)	Date Constructed/ Reconstructed	Aquifer	Well Vulnerability
Well 3	240768	P	16	45	55	1971	Glacial Drift	Vulnerable
Well 4	721698	P	12	50	60	2005	Glacial Drift	Vulnerable
Well 5	777222	P	12	94	108	2010	Glacial Drift	Vulnerable

4. Note: 1. Primary (P)
 5.
 6.

Assessment of the Data Elements

MDH staff met with representatives of the city of Foley on September 20, 2012 for a scoping meeting that identified the data elements required to prepare Part I of the WHP plan. **Table 2** presents the assessment of these data elements relative to the present and future implications of planning items that are specified in Minnesota Rules, part 4720.5210.

Table 2 - Assessment of Data Elements

Data Element	Present and Future Implications				Data Source
	Use of the Well (s)	Delineation Criteria	Quality and Quantity of Well Water	Land and Groundwater Use in DWSMA	
Precipitation	M	L	M	L	MN Climatology Office
Geology					
Maps and geologic descriptions	M	H	H	H	MGS, DNR, USGS, Consultant Reports
Subsurface data	M	H	H	H	MGS, MDH, MPCA, DNR
Borehole geophysics	M	H	H	H	MGS, Consultant Report
Surface geophysics	L	M	L	L	(none found)
Maps and soil descriptions	L	L	M	M	Natural Resources Conservation Service
Eroding lands					
Water Resources					
Watershed units	L	M	L	L	DNR, USGS
List of public waters	L	L	L	L	DNR
Shoreland classifications					
Wetlands map	L	M	L	L	DNR
Floodplain map					
Land Use					
Parcel boundaries map	L	H	L	L	Benton County
Political boundaries map	L	H	L	L	City and MnGEO
PLS map	L	H	L	L	MnGEO
Land use map and inventory					
Comprehensive land use map					
Zoning map					
Public Utility Services					
Transportation routes and corridors	L	M	L	L	MnDOT
Storm/sanitary sewers and PWS system map	L	L	L	L	City
Oil and gas pipelines map					
Public drainage systems map or list	L	M	L	L	DNR
Records of well construction, maintenance, and use	H	H	H	H	City, CWI, MDH
Surface Water Quantity					
Stream flow data	L	M	L	L	DNR
Ordinary high water mark data	L	M	L	L	DNR
Permitted withdrawals	L	M	L	L	DNR
Protected levels/flows	L	M	L	L	DNR
Water use conflicts	L	M	L	L	DNR
Groundwater Quantity					
Permitted withdrawals	H	H	H	H	DNR
Groundwater use conflicts	H	H	H	H	DNR

Data Element	Present and Future Implications				Data Source
	Use of the Well (s)	Delineation Criteria	Quality and Quantity of Well Water	Land and Groundwater Use in DWSMA	
Water levels	H	H	H	H	DNR, MPCA, City, MDH
Surface Water Quality					
Stream and lake water quality management classification					
Monitoring data summary	H	H	H	H	MPCA
Groundwater Quality					
Monitoring data	H	H	H	H	MPCA, MDH
Isotopic data	H	H	H	H	MDH,DNR
Tracer studies	H	H	H	H	DNR, MPCA (none found)
Contamination site data	M	H	H	M	MPCA
Property audit data from contamination sites					
MPCA and MDA spills/release reports	M	H	H	M	MPCA

• **Definitions Used for Assessing Data Elements:**

High (H) - the data element has a direct impact

Moderate (M) - the data element has an indirect or marginal impact

Low (L) - the data element has little if any impact

Shaded - the data element was not required by MDH for preparing the WHP plan

Acronyms used in this report are listed on page ii, after the “Glossary of Terms.”

General Descriptions

Description of the Water Supply System

The city of Foley obtains its drinking water supply from three primary wells. **Table 1** summarizes information regarding them.

Description of the Hydrogeologic Setting

The description of the hydrogeologic setting for the aquifers used to supply drinking water is presented in **Table 3**.

Table 3 - Description of the Hydrogeologic Setting

Attribute	Descriptor	Data Source
Aquifer Material	Sand and gravel	Well records and CWI database.
Porosity Type and Value	Primary 25 percent	Fetter, 2001.
Aquifer Thickness	Variable, generally ranges 15 to 25 feet	Well records and CWI database; grid files of the buried drift aquifer thickness from the MGS (Benton County Geologic Atlas, Part A; 2010).
Stratigraphic Top Elevation	Variable- dependent on bedrock topography; at Wells 3 and 5 (240768 and 777222), the top elevation is approximately 326 meters. The stratigraphic top elevation is 13 meters higher at Well 4 (721698).	Well records and CWI database; grid files of the buried drift aquifer and bedrock topography from the MGS (as part of the Benton County Geologic Atlas, Part A; 2010).
Stratigraphic Bottom Elevation	Variable- dependent on bedrock topography and aquifer thickness; at Well 5 (777222), the bottom elevation is approximately 319 meters. The stratigraphic bottom elevation is about 14 meters higher at Well 4 (721698).	Well records and CWI database; grid files of the buried drift aquifer and bedrock topography from the MGS (as part of the Benton County Geologic Atlas, Part A; 2010).
Hydraulic Confinement	Confined	Well logs and aquifer testing.
Transmissivity	Range of Values: 6,200 – 8,600 ft ² /day	A range of transmissivity values was used to reflect changes in aquifer composition and thickness as well as uncertainties related to the quality of existing aquifer test data. The range of values was determined from aquifer tests and specific capacity data as referenced in the aquifer test plans. See Table 4 for the reference values.
Hydraulic Conductivity	Range of Values: 165 - 312 ft/day Representative Value = 230 ft/d (used in base case model scenarios)	The range of values was derived from the range of transmissivities derived from aquifer testing and specific capacity data; the range also takes into account variable aquifer thickness as obtained from well records.
Groundwater Flow Field	See Figure 2 - Ambient Groundwater Flow Field	Defined by using static water level elevations from well records in the CWI database and documents listed in the “Selected References” section of this report.

The distribution of the aquifer and its stratigraphic relationships with adjacent geologic materials are shown in Figures 3 through 7. They were prepared using well record data that is contained in the CWI

database. The geological maps and studies that were used to further define local hydrogeologic conditions are provided in the “Selected References” section of this report.

Delineation of the Wellhead Protection Area

Delineation Criteria

The boundaries of the WHPA for the city of Foley are shown in Figure 1. **Table 4** describes how the delineation criteria are specified under Minnesota Rules, part 4720.5510, were addressed.

• **Table 4 - Description of WHPA Delineation Criteria**

Criterion	Descriptor	How the Criterion was Addressed
Flow Boundary	Geologic Boundaries	The buried drift aquifers serving the city wells have limited extent in the Foley area. Information from the county atlas was used to delineate the boundaries of the aquifers; the boundaries were further refined using local well stratigraphy information. Pumping test data at Wells 4 (721698) and 5 (777222) also confirm the presence of contrasting low permeability boundaries near these wells.
Flow Boundary	Surface Water Features	Local features of surface water discharge were simulated in the groundwater flow model. At the location of the east wellfield (Wells 3 and 4 [240768 and 721698]), the aquifer is relatively shallow and, although confined, may be under the influence of surface water features, such as Stony Brook Creek, which may control the water levels in the upper till units and unconfined portions of the city’s aquifer.
Flow Boundary	Other High-Capacity Wells	No other active high capacity wells were located within the model domain. The closest active high capacity well (Bauerly Allen’s agricultural Well, Unique Number 759355) is located about three miles southwest of Foley Well 5. This well reportedly pumps less than 17 million gallons per year (Groundwater Appropriations Permit 2008-0354).
Daily Volume of Water Pumped	See Table 5	Pumping information was obtained from the DNR, Groundwater Appropriations Permit No. 1978-3348, and was converted to a daily volume pumped by a well.

Criterion	Descriptor	How the Criterion was Addressed
Groundwater Flow Field	See Figure 2	The groundwater flow field was determined from local well data. The model calibration process addressed the relationship between the calculated versus observed groundwater flow field.
Aquifer Transmissivity (T)	Range of Values: 6,200 – 8,600 ft ² /day	The aquifer test plans were approved on November 7, 2013 and T was determined from production tests at city Wells 4 and 5 (721698 and 777222) and from specific capacity information from area wells. Uncertainty regarding aquifer transmissivity was addressed as described in Section 4.4.
Time of Travel	10 years	The public water supplier selected a 10-year time of travel.

Information provided by the public water supplier was used to identify the maximum volume of water pumped annually by each well over the previous five-year period, as shown in **Table 5**. Also, the estimated pumping for the next five years is shown. Previous pumping values have been reported to the DNR, as required by the public water supply's Groundwater Appropriations Permit No. 1978-3348. The maximum daily volume of discharge used as an input parameter in the model was calculated by dividing the greatest annual pumping volume by 365 days.

Table 5 - Annual Volume of Water Discharged from Water Supply Wells

Well Name	Unique No.	2008	2009	2010	2011	2012	5-Year Projection	Daily Volume (cubic meters)
Well 3	240768	50,663,000	49,481,000	63,848,000	16,884,000	14,813,400	50,000,000	662
Well 4	721698	28,331,000	29,671,000	21,838,000	11,058,000	3,458,200	20,000,000	308
Well 5	777222	(not constructed)	(not constructed)	2,345,000	53,410,000	68,912,220	75,000,000	778

7. (Expressed as gallons. Bolding indicates greatest annual pumping volume.)

In addition to the wells used by the public water supplier, there were several other high-capacity wells identified in the scoping 1 decision notice that were assessed as part of this delineation project. It was determined that these wells were either 1) no longer active, or 2) had no impact on the capture areas for the Foley public wells.

Method Used to Delineate the Wellhead Protection Area

Figure 1 shows the WHPA delineated for the city of Foley. The WHPA is a composite of all the areas identified using the methods described below that likely contribute recharge to the aquifer used by the public water supply wells within a 10-year time of travel.

The WHPA for the city of Foley was determined using a regional MODFLOW model that was specially developed for this project. MODFLOW is a 3D, cell-centered, finite difference, saturated flow model developed by the U.S. Geological Survey (McDonald and Harbaugh, 1988; Harbaugh et al., 2000).

The city wells draw from lenses of sand and gravel deposited during the Emerald Phase of the Superior lobe. The sand and gravel lenses are embedded in tills that confine these local aquifers. The Foley model was constructed using two-layers that represent from top to bottom, the following units: (1) upper clayey till unit and (2) Quaternary buried artesian aquifer or lower clayey till unit. The Quaternary buried artesian aquifer was represented by inhomogeneities of higher hydraulic conductivity embedded within a tighter clayey till unit.

The extent of the aquifer lenses was determined from the Benton County Geologic Atlas (Meyer et al., 2010; and, Rivord, 2012) and refined using local well logs. The different creeks and rivers within the active area of the model were represented by river conductance cells. Vertical recharge to the aquifer was applied to the model to represent potential leakage through the overlying till materials to the buried drift aquifer. Groundwater recharge values published by Delin and Falteisek (2007) were used initially in the model and modified as needed during calibration. Pumping wells from the SWUDS database were incorporated in the model using their locations from the CWI database. Aside from the three Foley active city wells there were no other active high-capacity wells identified within the model domain. The closest active high-capacity well was located almost three miles southwest of Foley Well 5 (777222).

The model grid was refined around the Foley wells. Variable grid spacing was used, ranging from five meters near the Foley wells to 30 meters at the edge of the grid. This refinement was required for an accurate computation of the particle flow paths for determining the WHPA delineation.

Prior to their use in the delineations, the following modifications were incorporated in the refined models:

- Local areas of modified horizontal conductivity were included in the model to reflect the transmissivities in the Foley well area.
- The pumping rates to be used in the WHPA were assigned to the Foley wells.

The delineation, using the particle tracking MODPATH Code, was performed by backtracking particles from the well to a 10-year time of travel. A series of 50 particles were launched at each well. A porosity of 25 percent was used for the glacial outwash deposits.

Results of Model Calibration and Sensitivity Analysis

Model quality is commonly evaluated by three different measures: calibration, sensitivity, and uncertainty analyses. Model calibration is a procedure that compares the results of a model based on estimated input values to measured or “known” values. This procedure is used to define model validity over a range of input values. The result of calibration is an assessment of the general quality of the model and the confidence that may be placed in the model results. As a matter of practice, groundwater flow models usually are calibrated using groundwater elevation and flow (if available). Sensitivity analysis quantifies the differences in model results produced by the natural variability of a particular parameter. Uncertainty analysis addresses the effects of poor data quality (lack of local detailed information or deficiencies in the data) on the model results. Together, sensitivity and uncertainty analyses are commonly used to evaluate the effects that natural variability and uncertainties in the hydrogeologic data have on the size and shape of the capture zones. In regards to the WHPA delineation, these analyses are used to document that the delineation is optimal, conservative, and protective of public health based on existing information.

Calibration

Model calibration is a procedure that compares the results of a model based on estimated input values to measured or known values. This procedure can be used to define model validity over a range of input values, or to help determine the level of confidence with which model results may be used. As a matter of practice, groundwater flow models are usually calibrated using water elevation or flux.

The Foley model was calibrated to the CWI database water level targets. The calibration was performed by manually adjusting the recharge rate values and comparing modeled piezometric heads against measured values at observation well locations, until a satisfactory fit is obtained. A quantitative measure by which to evaluate the success obtained during calibration is to compare the root mean square of the residuals (RMSE, or standard deviation of the model prediction error), and the maximum observed head difference across the model. A usually accepted calibration target is a RMSE that represents less than 10 to 15 percent of the total head change across the modeled area. For the present calibration, the standard deviation of the model prediction error represented 12.3 percent of the total change in measured heads across the model domain. The coefficient of correlation between measured and computed head was over 85 percent.

Sensitivity Analysis

Sensitivity is the amount of change in model results caused by the variation of a particular input parameter. Because of the relative simplicity of the model, the direction and extent of the modeled capture zone may be very sensitive to any of the input parameters:

The **pumping rate** directly affects the volume of the aquifer that contributes water to the well. An increase in pumping rate leads to an equivalent increase in the volume of aquifer and an expanded capture zone, proportional to the porosity of the aquifer materials.

Results - The pumping rate defined by WHP rule requirements is the highest rate that can be expected under normal water demand. Therefore, with respect to the delineation of the WHPA, the sensitivity of the capture zone to variations in the pumping rate is minimized.

The **direction of groundwater flow** determines the orientation of the capture zone. Variations in the direction of groundwater flow will not affect the size of the capture zone but are important for defining the areas that are contributing water to the well.

Results - The ambient groundwater flow field defined in Figure 2 provides the basis for determining the extent to which each model run reflects the conceptual understanding of the orientation of the capture area for a well. The regional model has been calibrated to hydraulic heads, and the local refined model calibration was verified. The sensitivity of the WHPA to the direction of groundwater flow should not be significant, given the current knowledge of hydraulic head distribution in the aquifer.

The **hydraulic gradient** (along with aquifer transmissivity) determines the rate at which water moves through the aquifer materials.

Results - The regional model has been calibrated to hydraulic heads. The local refined model calibration was verified. The sensitivity of the WHPA to the hydraulic gradient should not be significant, given the current knowledge of hydraulic head distribution in the aquifer.

The **horizontal hydraulic conductivity** generally influences the size and shape of the capture zone. In the base-case scenario, the hydraulic conductivity of the sand and gravel was estimated from the mean of horizontal hydraulic conductivities estimated from pump tests at Wells 3 and 4, and Well 5. This value was used in the groundwater model to delineate the 10-year time of travel capture zone. The pump tests yielded a range of hydraulic conductivity spanning from 50 m/day to 95 m/day (Table 3). These upper and lower values were used to assess the sensitivity of the capture zone to the hydraulic conductivity.

Results – An increase in the hydraulic conductivity of the sand and gravel aquifer slightly elongates the capture zone while reducing its width. This is most noticeable near Well 5 (777222) [Figure 8]. Near Wells 3 and 4 (240768 and 721698), the size of the capture is not very sensitive to the change in hydraulic conductivity. The capture zone is mostly governed by the extent of the buried sand and gravel aquifer.

The **conceptualization of Stony Brook Creek**, in the base scenario, was modeled using the MODFLOW River package. The use of this package assumes that the creek is perennial and is fed by surface runoff rather than by groundwater. The use of this package also implies the creek will recharge the aquifer whenever the water table drops below the water elevation in the creek. During several visits to the site, stretches of Stony Brook Creek appeared to be dry. To investigate the impact that the conceptualization of the creek has on the capture zone, Stony Creek was modeled using the Drain package. The use of the Drain package implies that the creek can only receive groundwater and will, under no circumstances, recharge the aquifer. Two scenarios were considered: 1) in the first scenario, the creek was modeled using the drain package upstream of Well 3 and only along a stretch in the city near Wells 3 and 4. 2) In the second scenario, the use of the Drain package was extended all the way to near Well 5.

Results – In order to run these two scenarios, the recharge had to be increased near Well 3 and Well 4. The increase in recharge yielded a smaller capture zone near Wells 3 and 4. Since no recharge was changed near Well 5, the impact on the capture zone was much smaller (Figure 8). The difference between the two scenarios is very small and only slight changes in the capture zone were computed.

The aquifer **porosity** influences the size and shape of the capture zone.

Results - Decreasing porosity causes a linear, proportional increase in the areal extent of the capture zone.

Addressing Capture Zone Uncertainty

Using computer models to simulate groundwater flow involves representing a complicated natural system in a simplified manner. Local geologic conditions may vary within the capture area of the Foley wells, but existing information is not sufficiently detailed to define this degree of variability. In addition, the available groundwater flow modeling techniques may not represent the natural flow system exactly, however, the results are valid within a range defined by the reasonable variation of input parameters.

Traditional numerical groundwater models were used to delineate the capture zone for the porous media aquifer that contributes water to the public water supply well. The steps employed for this delineation to address model uncertainty were:

- **Pumping Rate** - For the well, a maximum historical (5-year) pumping rate or an engineering estimate of future pumping, whichever is greater (Minnesota Rules, part 4720.5510, subpart 4).
- **Horizontal hydraulic conductivity and conceptualization of Stony Brook Creek** - The WHPA for the Foley wells consists of a composite of the porous media aquifer delineations for the different scenarios used in the sensitivity analysis.
- **Mapped Aquifer Boundaries** - In the case of the east wellfield, model simulations suggest that the pumping volumes of Wells 3 and 4 (721698 and 777222) likely reach to the furthest extent of the mapped aquifer. Therefore, regardless of the conceptualizations of Stony Brook Creek, the final uncertainty scenario involves using aquifer boundaries to delineate the capture zone boundaries of Wells 3 and 4 (721698 and 777222). This is not the case for the west wellfield, where the mapped aquifer is more extensive relative to the volume of water pumped from Well 5 (777222).

Capture areas were developed for a range of aquifer horizontal hydraulic conductivities, two conceptualizations of Stony Brook Creek, mapped aquifer boundaries, and a time of travel of 10 years (Figure 8). As the model code uses constant input values for each run, several runs were required to include all variations in input parameters. The WHPA for the city of Foley wells consists of a composite of the porous media aquifer delineations for the different input parameters used in the sensitivity analysis. This provides a conservative approach to addressing model uncertainty and produces a WHPA that will be most protective of public health.

Assessing Conjunctive Delineation

The need for a conjunctive delineation was also assessed as part of this project with respect to surface water contribution by Stony Brook creek and/or runoff infiltration relative to the high vulnerability area of the aquifer in the east DWSMA. After evaluating existing information, it was determined not to include a conjunctive delineation approach; however, MDH recommends that the city include measures in their WHP plan to further assess and confirm initial findings during the implementation phase of their plan.

Water samples were collected from city Wells 3 and 4 (240768 and 721698) in June, 2006 and analyzed for the stable isotopes of oxygen and hydrogen. More recently (May and June, 2013), water samples were collected from the public wells and analyzed for chloride, bromide, total nitrate, sulfate and total organic carbon (TOC). The results from these tests are provided in Appendix A. The stable isotope results for the public wells fall on the meteoric water line, indicating that there was little or no surface water contribution at the time of monitoring (Appendix A). The lack of TOC in the water

samples from the public wells also supports the lack of direct contribution from surface water. Therefore, at this time, it is determined that water quality results do not necessarily support a conjunctive delineation approach. Ideally, water samples should have been collected from the creek when the city wells were sampled so that a comparison could be made between the well water samples and the creek water sample. It is recommended that MDH collect a second round of water samples from both the city wells and Stony Brook creek to confirm the initial findings and allow for a more accurate assessment of the relationship between the aquifer used by the wells and this surface water feature. This additional investigation can be done during the implementation phase of the city's wellhead protection plan. If a stronger connection is suggested by the additional data, then the wellhead protection area boundaries will be refined to include contribution by Stony Brook creek. This refinement of the wellhead boundaries can occur when the city's plan is amended (in approximately ten years).

An assessment was also made of the potential contribution by surface water to the highly vulnerable portions of the aquifer by means of runoff from surrounding land. Maps provided to MDH by the city show most of the runoff in town is routed by the existing stormwater infrastructure so that there are likely very few, if any, areas of focused infiltration to the highly vulnerable portions of the aquifer. The exception may be in the southeast portion of the DWSMA. In the vicinity of Well 3 (240768), stormwater infrastructure may be lacking and land surface elevation data (DNR, 2012) indicate small, isolated areas where there may be potential for surface water run off to infiltrate into the aquifer. Most of these areas are already contained within the boundaries of the DWSMA. Therefore, at this time, the wellhead protection area was not expanded to include contribution by surface water due to runoff. However, MDH recommends that the city includes a measure in their WHP plan to further evaluate the potential for runoff to infiltrate in areas of the DWSMA lacking existing stormwater infrastructure. A field inspection combined with an assessment of LiDar data, and soils and subsurface geologic information should be considered as part of this work.

Delineation of the Drinking Water Supply Management Area

The boundaries of the Drinking Water Supply Management Areas (DWSMA) were defined by the city of Foley using the following features (Figure 1):

- Center-lines of highways, streets, roads, or railroad rights-of-ways

- Public Land Survey coordinates

- Property parcel boundaries

For this delineation, electronic parcel information was provided to MDH by Benton County. This information was very useful in refining the DWSMA boundaries.

Vulnerability Assessments

The Part I wellhead protection plan includes the vulnerability assessments for the city of Foley's wells and DWSMAs. These vulnerability assessments are used to help define potential contamination sources within the DWSMA and select appropriate measures for reducing the risk they present to the public water supply.

Assessment of Well Vulnerability

All of the city's wells are considered vulnerable to contamination occurring at the land surface. The vulnerability assessments for each well used by the city of Foley are listed in **Table 1**, and are based upon the following conditions:

- 1) Well construction meets current State Well Code specifications (Minnesota Rules, part 4725), meaning that the well itself should not provide a pathway for contaminants to enter the aquifer used by the public water supplier.
- 2) The geologic conditions at the well sites are variable. At the location of Well 5 (777222), the cover of clay-rich geologic materials over the aquifer is sufficient to retard or prevent the vertical movement of contaminants. However, at the location of Well 4 (721698), the till materials overlying the aquifer has a higher proportion of coarse-grained materials (silt and sand) and is comparatively thin. There isn't a geologic log available for Well 3 (240768) but the stratigraphy is assumed to be similar to existing Well 4 (721698) and former Well 2 (224818).
- 3) In the case of Well 5 (777222), none of the human-caused contaminants regulated under the federal Safe Drinking Water Act have been detected at levels indicating that the well itself serves to draw contaminants into the aquifer as a result of pumping (Alexander and Alexander, 1989). However, in the mid to late-1990's, trace levels of volatile and synthetic organic compounds were detected in Well 3 (240768). In addition, on one occasion in 2007, low levels of petroleum related contaminants were also detected in Well 4 (721698). The periodic detections of anthropogenic compounds indicate a connection to land use activities.
- 4) Water samples were collected from the wells and were analyzed for tritium, nitrate, chloride and bromide. The isotope results confirm that all three wells are vulnerable to activities occurring at the land surface. In addition, recent nitrate, chloride and bromide results for Well 3 (240768) also confirm that this well has been impacted by land use activities. However, the nitrate, chloride and bromide results for Wells 4 and 5 (721698 and 777222) indicate little impact by existing land-use activities. (Table 6).

Table 6 - Isotope and Water Quality Results

Well	Tritium (TU)	Nitrate (mg/l)	Chloride/ Bromide (Cl/Br) Ratio		Chloride (mg/l)		Bromide (mg/l)	
Well 3 (240768)	9.7 (6/2006)	1.6 (5/2013)	797 (6/2013)	1043 (1/2010)	95.6 (6/2013)	62.6 (1/2010)	0.12 (6/2013)	0.06 (1/2010)
Well 4 (721698)	18.4 (6/2006)	0.32 (5/2013)	203 (6/2013)		58.8 (6/2013)		0.29 (6/2013)	
Well 5 (777222)	3.4 (4/2012)	<0.05 (5/2013)	380 (6/2013)	388 (4/2012)	22.8 (6/2013)	23.5 (4/2012)	0.06 (6/2013)	0.0605 (4/2012)

Assessment of Drinking Water Supply Management Area Vulnerability

The results of the vulnerability assessments of the DWSMAs are shown in Figure 9 and are based upon the following information:

- 5) Review of the geologic logs contained in the CWI database and geological maps and reports indicate that the aquifer exhibits variable geologic sensitivity ranging from low to very high in the DWSMA for Wells 3 and 4 (240768 and 721698), and from very low to moderate in the DWSMA for Well 5 (777222).
- 6) Isotopic and water chemistry data from wells located within the DWSMAs indicate the aquifers contain young water and receive recharge from the land surface within relatively short time periods.
 - In the case of the west DWSMA where the geologic sensitivities are primarily very low or low, the overall vulnerability ranking was determined to be moderate because of the presence of tritium in water samples from Well 5 (777222) and another buried drift well (643671) located within the DWSMA (Rivord, 2012).
 - In the east DWSMA, the presence of young water and historic detections of anthropogenic contaminants in both city Wells 3 and 4 (240768 and 721698) confirm a high vulnerability rating, though the geologic sensitivities are variable. In addition, historical releases from a leaky underground petroleum tank(s) impacted the buried drift aquifer and city Well 2 (224818), confirming the high vulnerability rating of the aquifer serving the public wells located in the east DWSMA. As a result of contamination by volatile organic compounds, Well 2 (224818) was sealed and the city received financing to construct city Well 5 (777222) to meet water demand needs. Based on this information, that portion of the east DWSMA believed to be underlain by the city's aquifer has been identified as highly vulnerable whereas those areas outside of the aquifer boundary are determined to be moderately vulnerable.

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- Setterholm, D.R., Lively, R.S., and Gowan, A.S. (2010), Bedrock topography, depth to bedrock, and sand distribution model, in *Geologic atlas of Benton County, Minnesota*, Setterholm, D.R., (Project mgr.), County Atlas Series, C-23, Plate 5, Minnesota Geological Survey, St. Paul, Minn., scales 1:200,000 and 1:300,000.

Strack, O.D.L. (1989), *Groundwater mechanics*, Prentice Hall, Englewood Cliffs, N.J., 732 p.

Figures

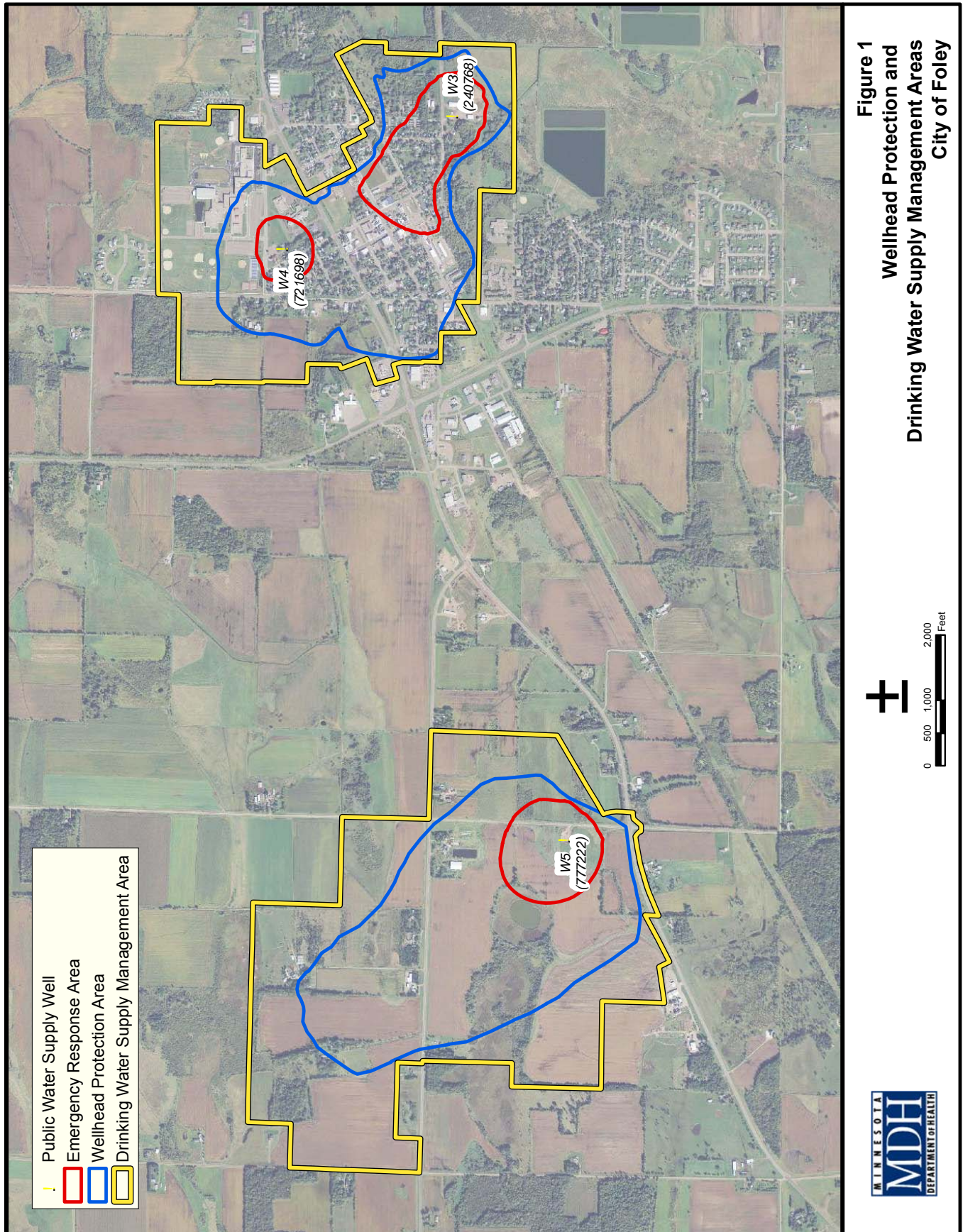


Figure 1
Wellhead Protection and
Drinking Water Supply Management Areas
City of Foley

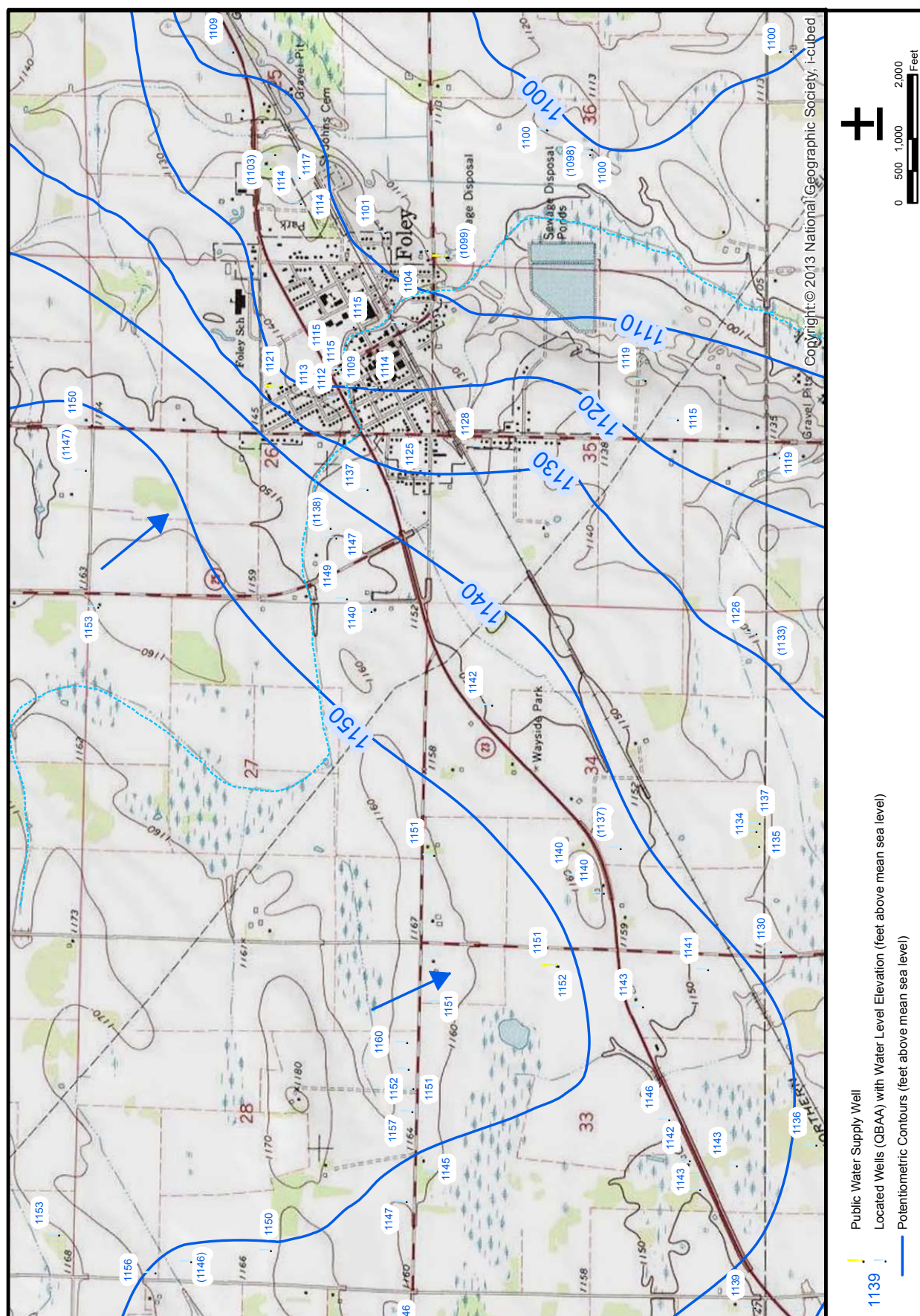
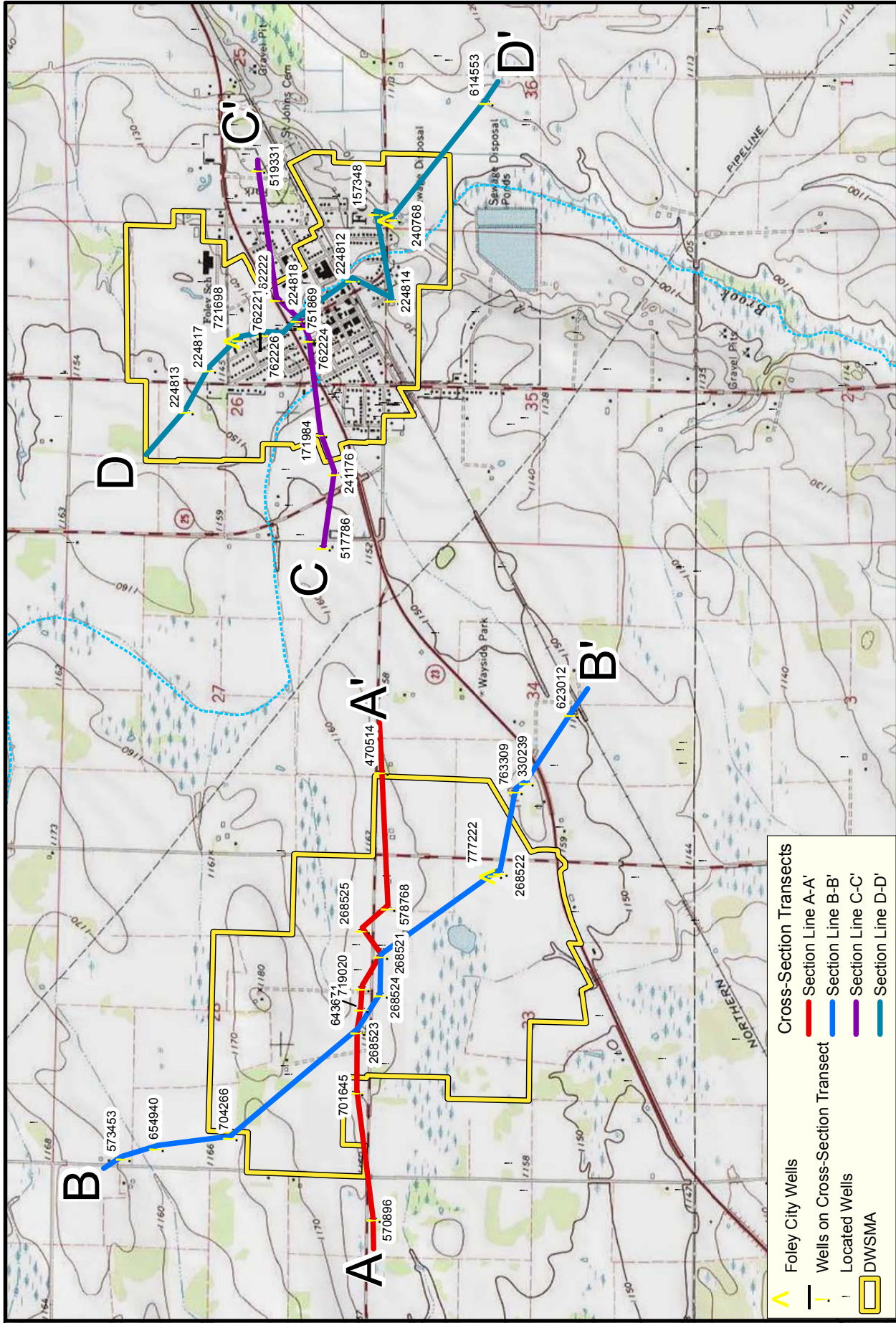


Figure 2 Ambient Groundwater Flow Field



±

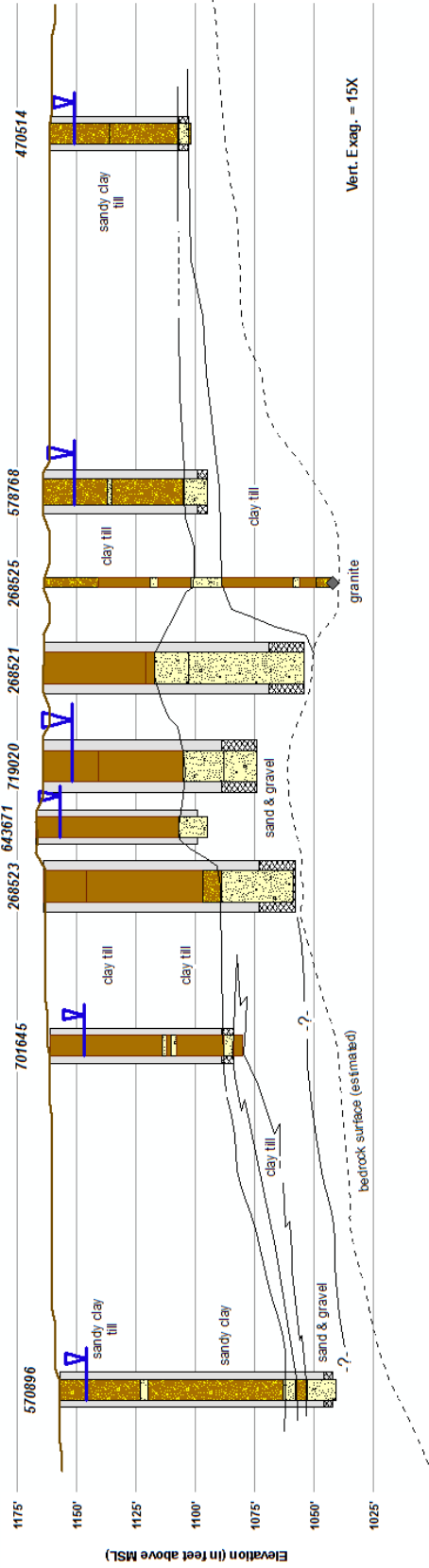
0 2,500 5,000 Feet



Figure 3
Geologic Cross-Section Locations
Foley Water Supply

A'
East

A
West



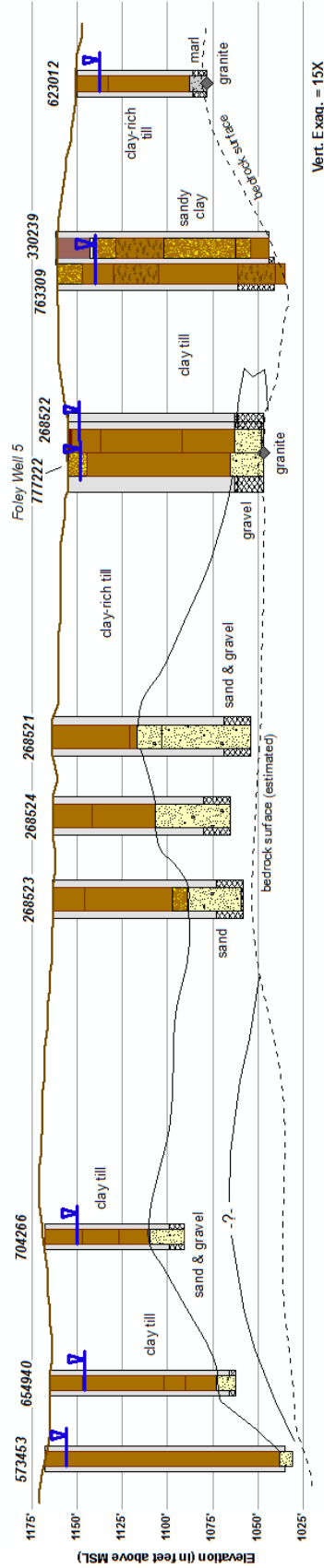
Explanation	
Ground Surface	
Water Level	
Geologic Materials (generalized)	
SOIL	
SILTY SANDY TILL	
SANDY CLAY TILL	
CLAY-RICH TILL	
SAND and/or GRAVEL	
WEATHERED BEDROCK	
GRANITE	
Well Construction	
Casing	
Screen	



Figure 4
Geologic Cross-Section A-A'

B' Southeast

B Northwest

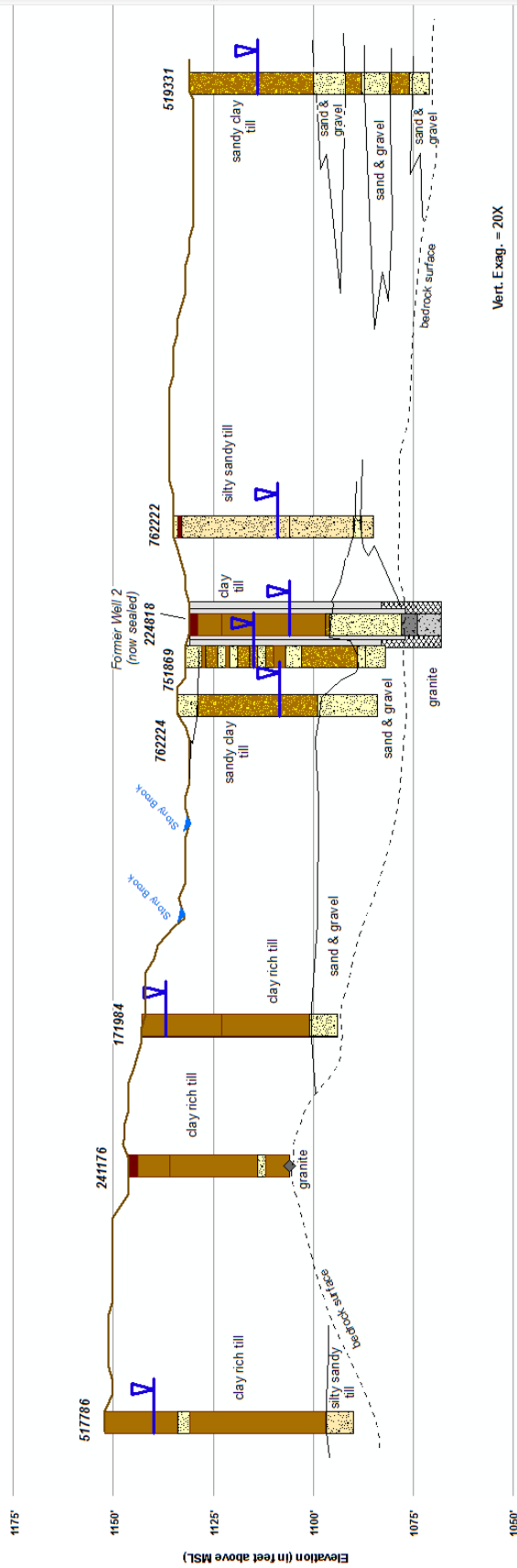


Explanation	
	Ground Surface
	Water Level
Geologic Materials (generalized)	
	SOIL
	SILTY SANDY TILL
	SANDY CLAY TILL
	CLAY-RICH TILL
	SAND and/or GRAVEL
	WEATHERED BEDROCK
	GRANITE
Well Construction	
	Casing
	Screen

Figure 5
Geologic Cross-Section B-B'

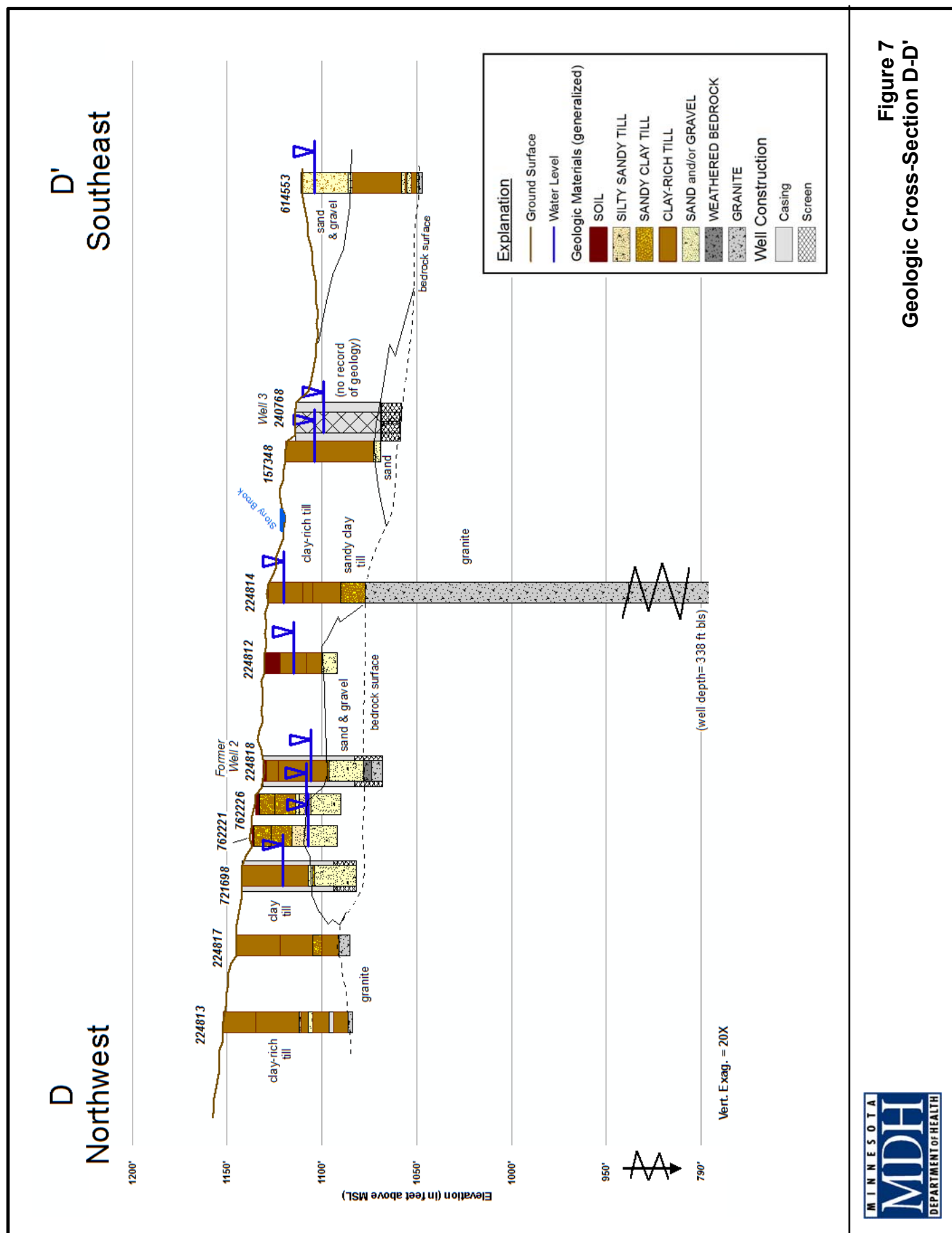
C'
East

C
West



Explanation	
	Ground Surface
	Water Level
Geologic Materials (generalized)	
	SOIL
	SILTY SANDY TILL
	SANDY CLAY TILL
	CLAY-RICH TILL
	SAND and/or GRAVEL
	WEATHERED BEDROCK
	GRANITE
Well Construction	
	Casing
	Screen

Figure 6
Geologic Cross-Section C-C'



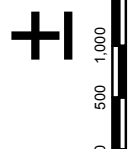
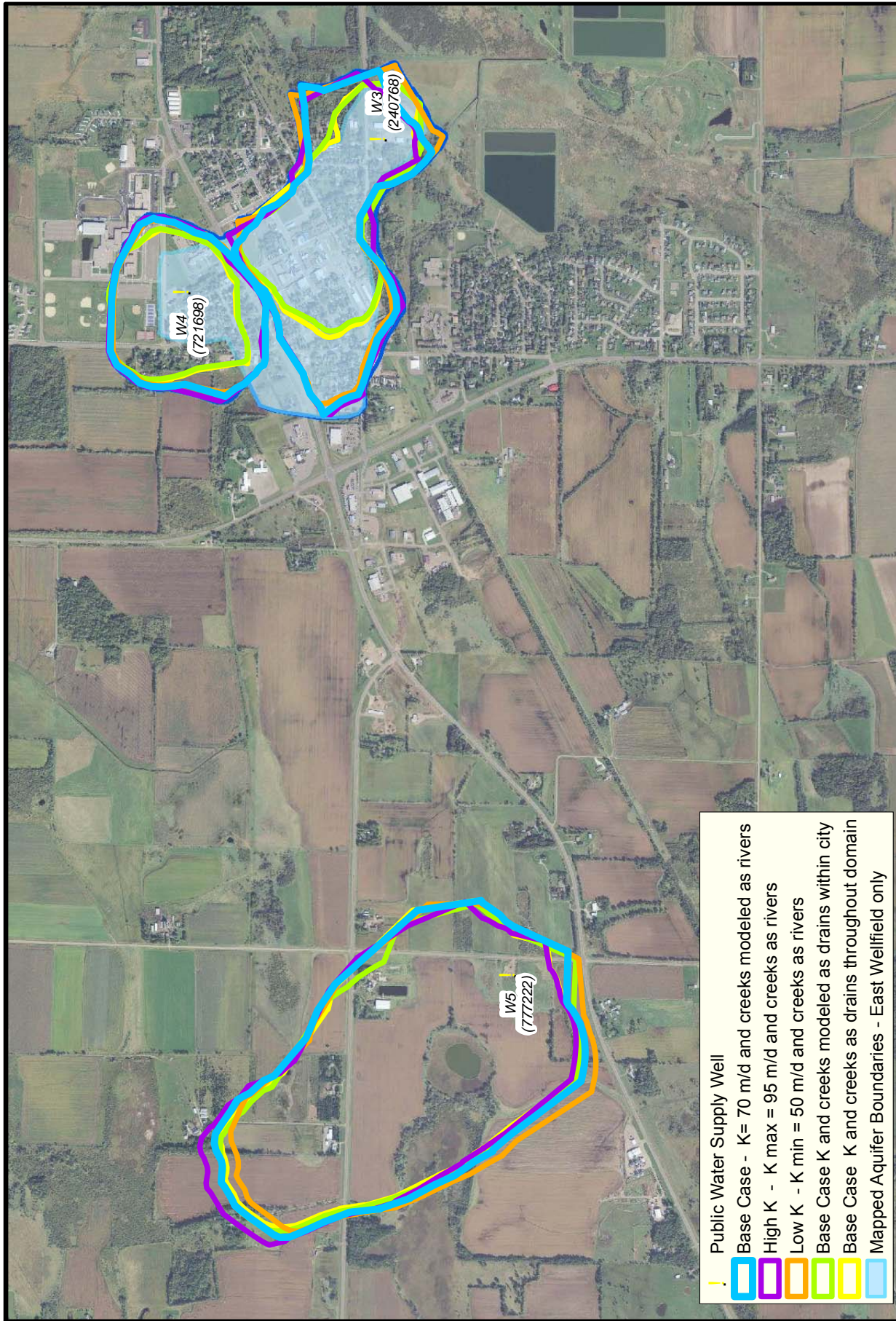


Figure 8
Results of the Capture Zone Uncertainty Analysis
City of Foley

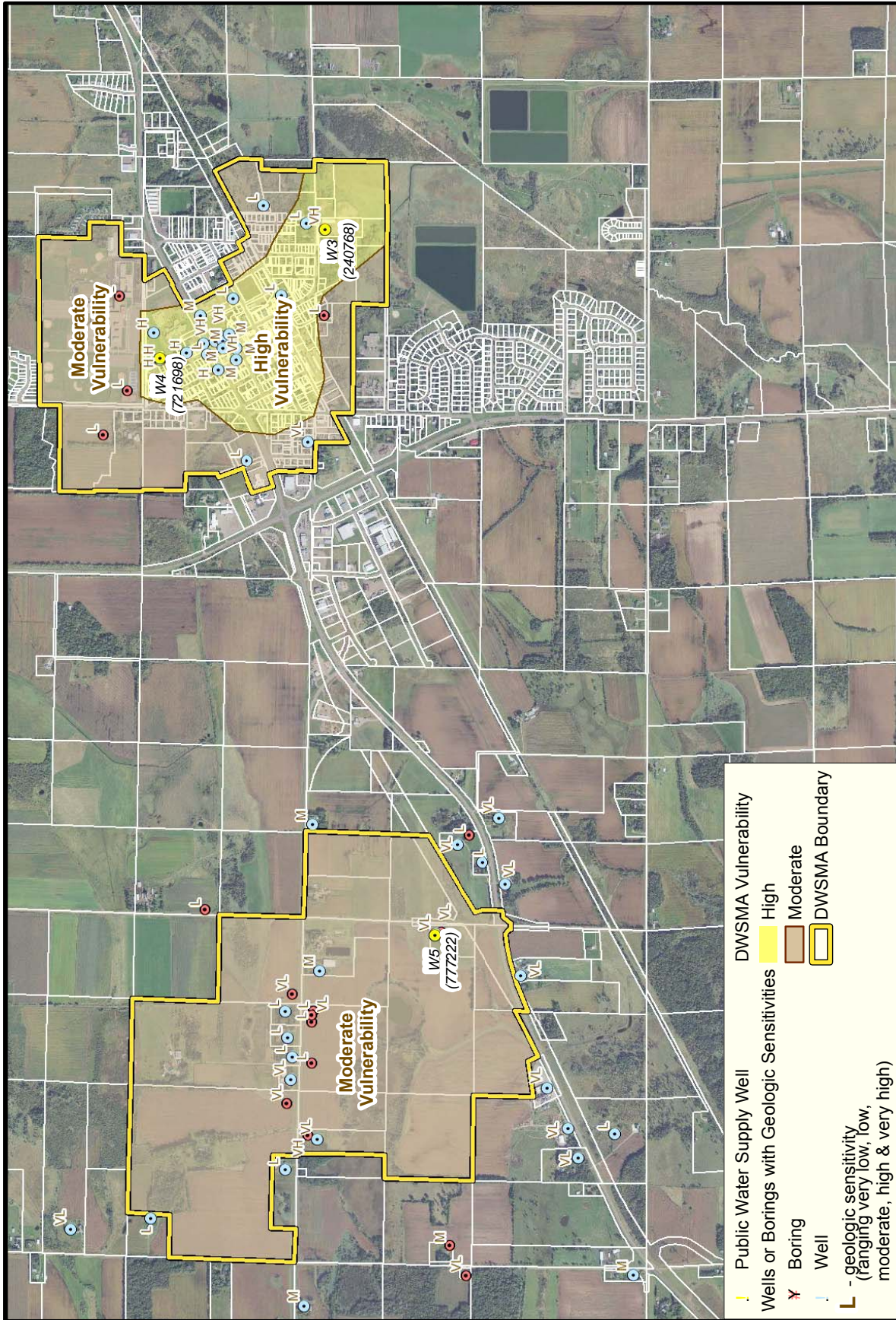


Figure 9
Drinking Water Supply Management Area Vulnerability
City of Foley

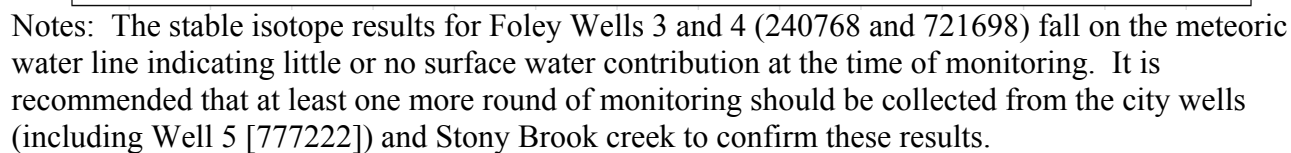
Appendix A

Water Quality Results

City of Foley

Summary of General Chemistry and Isotope Results

Well	Tritium (TU)	Nitrate (mg/l)	Chloride/ Bromide (Cl/Br) Ratio	Chloride (mg/l)	Bromide (mg/l)		Total Organic Carbon (TOC) (mg/l)	Ammonia Nitrogen (mg/l)	Sulfate (mg/l)	Stable Isotopes (per mil) Delta 18O Delta 2H	
Well 3 (240768)	9.7 (6/2006)	1.6 (5/2013)	797 (6/2013)	95.6 (6/2013)	0.12 (6/2013)	0.06 (6/2013)	2.2 (6/2013)	0.06 (6/2013)	55.60 (6/2013)	-9.78 (6/2006)	-71.14 (6/2006)
Well 4 (721698)	18.4 (6/2006)	0.32 (5/2013)	203 (6/2013)	58.8 (6/2013)	0.29 (6/2013)		1.9 (6/2013)	< 0.05 (6/2013)	49.30 (6/2013)	-9.5 (6/2006)	-68.1 (6/2006)
Well 5 (777222)	3.4 (4/2012)	<0.05 (5/2013)	380 (6/2013)	22.8 (6/2013)	0.06 (6/2013)	0.23 (6/2013)	2.8 (6/2013)	0.23 (6/2013)	20.30 (6/2013)	<i>(not sampled)</i>	



COPY

February 27, 2007

Mr. Jim Moshier
Water Superintendent - City of Foley
P.O. Box 709
Foley, Minnesota 56329-0709

Dear Mr. Moshier:

Subject: Scoping Decision Notice No. 1 for the City of Foley, PWSID 1050001

This letter provides notice of the results of the Scoping 1 meeting that we held with you, Mr. Tom Dombrovski and Mr. Larry Nadeau (city council members), Mr. Rich Zimmer (City Administrator), Mr. Dave Neiman (Minnesota Rural Water Association), and Mr. Mike Howe (Minnesota Department of Health Planner) on January 30, 2007, regarding wellhead protection planning. During the meeting, we discussed the preparation of Part I of a Wellhead Protection Plan that will document the 1) delineation of a wellhead protection area, 2) delineation of a drinking water supply management area, and 3) assessments of well and aquifer vulnerability related to these areas for Foley Well Nos. 2, 3 and 4 (Unique Nos. 224818, 240768 and 721698, respectively). The wellhead protection area is the surface and subsurface area surrounding your public water supply wells through which contaminants are likely to move and affect your drinking water supply. The drinking water supply management area is the area delineated using identifiable land marks that reflect the wellhead protection area boundaries as closely as possible.

It is our understanding that Foley Well No. 2 (Unique Well No. 224818) is off-line at this time. If the status of this well changes from primary to emergency standby, then a wellhead protection area will not be defined for this well. However, the city will be required to manage an inner wellhead protection management zone that is defined by a 200-foot radius around each emergency standby well.

According to the state wellhead protection rule, the city will have until February 9, 2009, to complete its entire Wellhead Protection Plan, Part I and Part II. As we discussed, the rule describes the criteria used for determining the time period for completion of the Wellhead Protection Plan (Minnesota Rules, part 4720.5130).

It is our understanding that the Minnesota Department of Health (MDH) will assist the city with the preparation of its Part I report. There will be no cost to the city for any involvement by MDH staff with this work. It will be the responsibility of Foley to assist with the data collection to aid in the delineation and vulnerability assessments.

At our meeting, we discussed rule requirements and the types of information needed to prepare the Part I report. The Wellhead Protection Plan must be prepared in accordance with Minnesota Rules, parts 4720.5100 to 4720.5590. General wellhead protection requirements and criteria for delineating the wellhead protection area and data reporting are presented in Minnesota Rules, parts 4720.5500 to 4720.5510.

The enclosed Scoping Decision Notice No. 1 formally identifies the information that the city must provide to MDH to meet rule requirements for preparing Part I of the Wellhead Protection Plan. The wellhead rule refers to the existing information required for wellhead planning as data elements. Much of this information is available in the public domain, as described in the Scoping Decision Notice No. 1 form.

Mr. Jim Moshier
Page 2
February 27, 2007

You only need to provide the information that is not in the public domain and, therefore, not available to MDH. The Scoping Decision Notice No. 1 form also 1) lists the Minnesota unique well number and well construction for each well that will be included in the Wellhead Protection Plan [Table 1], 2) lists of pumping volumes for each well [Table 2], and 3) includes a map of the well locations. A summary of the information that the city needs to provide is included at the end of the Scoping Decision Notice No.1 form.

After we have had an opportunity to review the information listed in the Scoping Decision Notice No. 1 that you will be providing to the MDH, we would appreciate the opportunity to again meet with you and select the appropriate method for delineating your wellhead protection area. We also will discuss how you can become involved in the preparation of the Part I report.

Finally, it is our understanding that you will serve officially as the wellhead protection manager on behalf of the city. You are responsible for providing written notice to local units of government of the city's intent to develop the Wellhead Protection Plan, as required by the wellhead protection rule (part 4720.5300, subpart 3). A copy of this notice should be forwarded to MDH and must include a list of the city wells, their unique well numbers, and contact information for the Wellhead Protection Plan manager. Mr. Mike Howe, Source Water Protection Unit Planner, can provide you with some examples of the notification of intent that other communities have used. Please contact him at 320-650-1076.

In closing, we look forward to working with you on completion of your Wellhead Protection Plan. If you have any questions regarding our comments, please contact me at 651/201-4691 or gail.haglund@health.state.mn.us. In addition, Mr. Dave Neiman (Minnesota Rural Water Association) is available to assist you with the development of your wellhead protection plan. His phone number is 218-825-7411.

Sincerely,

COPY

Gail Haglund, Hydrologist
Minnesota Department of Health
Environmental Health Division
P.O. Box 64975
St. Paul, Minnesota 55164-0975

GLH: kmc
Enclosures:

Scoping Decision Notice No. 1
Summary of Data Requested
Map of Well Location(s)
Table 1 - Public Water Supply Well Information
Table 2 - Annual Volume of Water Pumped From City Wells

cc: Mr. Mike Howe, Planner, Source Water Protection Unit, St. Cloud District Office
Mr. Dave Neiman, Minnesota Rural Water Association
bcc: Mr. Chuck Regan, Minnesota Pollution Control Agency
Ms. Laurel Reeves, Minnesota Department of Natural Resources
Mr. Brian Williams, Minnesota Department of Agriculture
Mr. Eric Mohring, Board of Water and Soil Resources

COPY SCOPING DECISION NOTICE No. 1

The purpose for the first Scoping Meeting, as required by Minnesota Rule 4720.5310, is to discuss the information necessary for preparing the Part I Report of a Wellhead Protection Plan. The Part I Report identifies the area that provides the source of drinking water for the public water supply (PWS) so that the PWS can develop land use or management practices to protect their groundwater resource from contamination. Specifically, the Part I Report documents the delineation of the wellhead protection area (WHPA), the delineation of the drinking water supply management area (DWSMA), and assesses the vulnerability of the PWS well(s) and DWSMA.

The wellhead rule (Minnesota Rule 4720.5310) refers to the information required for wellhead planning as data elements. This form lists the data elements that are stated in Minnesota Rule 4750.5400. The Minnesota Department of Health (MDH) uses this form to designate which data elements are needed to prepare the Part I Report, based on the hydrogeological setting, vulnerability of the well(s), and aquifer information known at the time of the Scoping 1 Meeting.

Name of Public Water Supply		Date	
City of Foley (PWSID = 1050001)		February 27, 2007	
Name of the Wellhead Protection Manager			
Mr. Jim Moshier, Water Superintendent			
Address		City	
251 Fourth Avenue North P.O. Box 709		Foley	
Unique Well Numbers		Zip	
224818 (Well No. 2), 240768 (Well 3) and Well 4 (721698)		56329-0709	
		Phone	
		(320) 968-4082	

Instructions for Completing the Scoping No. 1 Form

N	D	V	S	N = If this box is checked with an "X," this data element is NOT necessary for the Part I Report of your Wellhead Protection Plan. This data element may be identified later at the Scoping 2 Meeting and used for the Part 2 Report. Please go to the next data element.
X				

N	D	V	S	D = If this box is checked with an "X," the preparer of the Part I Report is required to use this information for the DELINEATION of the WHPA or the DWSMA. If there is no check in the "S" box, this information is available in the public domain or is on-file at MDH.
	X			

N	D	V	S	V = If this box is checked with an "X," the preparer of the Part I Report is required to use this information for the VULNERABILITY assessment of the PWS well(s) or the DWSMA. If there is no check in the "S" box, this information is available in the public domain or is on-file at MDH.
		X		

N	D	V	S	S = If this box is checked with an "X," the PWS must SUBMIT the information to the MDH.
			X	

DATA ELEMENTS ABOUT THE PHYSICAL ENVIRONMENT

A. PRECIPITATION				
N	D	V	S	A.1: An existing map or list of local precipitation gauging stations.
	X			
Technical Assistance Comments: Precipitation values can be used to determine the local recharge in the groundwater model. The map can be used to determine the closest gauging station. The locations of the gauging stations are available in the public domain.				
N	D	V	S	A.2: An existing table showing the average monthly and annual precipitation, in inches, for the preceding five years.
	X		X	
Technical Assistance Comments: This information may be used for determining local recharge for the groundwater model. This information may be available in the public domain if there is a local gauging station, or may be obtained from the local wastewater treatment plant.				
B. GEOLOGY				
N	D	V	S	B.1 An existing geologic map and a description of the geology, including aquifers, confining layers, recharge areas, discharge areas, sensitive areas as defined in Minnesota Statutes, section 103H.005, subdivision 13, and groundwater flow characteristics.
	X	X	X	
Technical Assistance Comments: Information of this type is required to characterize the geologic and hydrogeologic setting of the Foley public wells. This information is used to define aquifer geometry, location and magnitude of the recharge and discharge areas, and groundwater flow information. Aquifer tests or alternatives listed in MN Rules 4720.5510, subpart 6, can be used to help characterize flow in the aquifer. Reference all information used to develop the conceptual model of the geologic setting and submit to MDH only the information that is not available in the public domain.				
N	D	V	S	B.2: Existing records of the geologic materials penetrated by wells, borings, exploration test holes, or excavations, including those submitted to the department.
	X	X	X	
Technical Assistance Comments: Information of this type may be useful to refine the understanding of the geologic and hydrogeologic setting on a local basis. Submit only if the Foley public water system or city has information of test drilling or site investigations conducted by the city that is not available in the public domain.				
N	D	V	S	B.3: Existing borehole geophysical records from wells, borings, and exploration test holes.
	X	X	X	
Technical Assistance Comments: Information from geophysical records may provide additional information about aquifer thickness, well construction, and water level information at a local level. Submit only if the information is not available in the public domain.				
N	D	V	S	B.4: Existing surface geophysical studies.
	X	X	X	
Technical Assistance Comments: Information from geophysical studies may be useful to refine the understanding of the geology on a local basis. Submit only if the information is not available in the public domain.				
C. SOILS				
N	D	V	S	C.1: Existing maps of the soils and a description of soil infiltration characteristics.
	X	X		
Technical Assistance Comments: This information is in the public domain and can be used to delineate the WHPA and assess the vulnerability of the DWSMA because it indicates the underlying geology.				
N	D	V	S	C.2: A description or an existing map of known eroding lands that are causing sedimentation problems.
X				
Technical Assistance Comments:				

D. WATER RESOURCES				
N	D	V	S	D.1: An existing map of the boundaries and flow directions of major watershed units and minor watershed units.
	X			
Technical Assistance Comments: This information is in the public domain and may be used to delineate the surface water contribution area of the WHPA.				
N	D	V	S	D.2: An existing map and a list of public waters as defined in Minnesota Statutes, section 103G.005, subdivision 15, and public drainage ditches.
	X	X		
Technical Assistance Comments: This information is in the public domain and may be used to delineate the surface water contribution area of the WHPA and determine the vulnerability of the DWSMA.				
N	D	V	S	D.3: The shoreland classifications of the public waters listed under sub-item (2), pursuant to part 6120.3000 and Minnesota Statutes, sections 103F.201 to 103F.221.
X				
Technical Assistance Comments:				
N	D	V	S	D.4: An existing map of wetlands regulated under Chapter 8420 and Minnesota Statutes, section 103G.221 to 103G.2373.
X				
Technical Assistance Comments:				
N	D	V	S	D.5: An existing map showing those areas delineated as floodplain by existing local ordinances.
X				
Technical Assistance Comments:				

DATA ELEMENTS ABOUT THE LAND USE

E. LAND USE				
N	D	V	S	E.1: An existing map of parcel boundaries.
	X		X	
Technical Assistance Comments: This information may be helpful in delineating the DWSMA, if available. If this information is provided, identification numbers must be provided for each parcel. An electronic format for the map is preferable.				
N	D	V	S	E.2: An existing map of political boundaries.
	X		X	
Technical Assistance Comments: Please provide this information if the boundaries have been updated/changed. This information may be helpful in delineating the DWSMA. An electronic format for the map is preferable.				
N	D	V	S	E.3: An existing map of public land surveys, including township, range, and section.
	X			
Technical Assistance Comments: This information is available in the public domain and may be helpful in delineating the DWSMA.				
N	D	V	S	E.4: A map and an inventory of the current and historical agricultural, residential, commercial, industrial, recreational, and institutional land uses and potential contaminant sources.
X				
Technical Assistance Comments:				

N	D	V	S	E.5: An existing, comprehensive land-use map.
X				
Technical Assistance Comments:				
N	D	V	S	E.6: Existing zoning map.
X				
Technical Assistance Comments:				
F. PUBLIC UTILITY SERVICES				
N	D	V	S	F.1: An existing map of transportation routes or corridors.
	X			
Technical Assistance Comments: This information is available in the public domain and may be helpful in delineating the DWSMA.				
N	D	V	S	F.2: An existing map of storm sewers, sanitary sewers, and the public water supply systems.
	X		X	
Technical Assistance Comments: Do not submit a map of the storm sewers and sanitary sewers. Describe the difference in how much water is pumped and how much is sold. The difference is the leakage that may be used as recharge in the groundwater model.				
N	D	V	S	F.3: An existing map of gas and oil pipelines used by gas and oil suppliers.
X				
Technical Assistance Comments:				
N	D	V	S	F.4: An existing map or list of public drainage systems.
	X	X		
Technical Assistance Comments: This information is available in the public domain and may be helpful in delineating the DWSMA.				
N	D	V	S	F.5: An existing record of construction, maintenance, and use of the public water supply well(s) and other wells within the DWSMA.
	X	X	X	
Technical Assistance Comments: Please provide 1) the pumping rates for the current and previous years, and the projected annual pumping rates for the next five years for each public well; and 2) well records for the Foley public wells if the information is different than that on-file with MDH. Information about the public wells may affect the vulnerability assessment due to rehabilitation/reconstruction of a well or changes in pumping rates.				

DATA ELEMENTS ABOUT WATER QUANTITY

G. SURFACE WATER QUANTITY				
N	D	V	S	G.1: An existing description of high, mean, and low flows on streams.
	X	X		
Technical Assistance Comments: This information is available in the public domain and may be used to determine hydraulic connections between surface water bodies and the aquifer(s) of concern.				
N	D	V	S	G.2: An existing list of lakes where the state has established ordinary high water marks.
	X			
Technical Assistance Comments: This information is available in the public domain. The information may be used to determine the WHPA.				
N	D	V	S	G.3: An existing list of permitted withdrawals from lakes and streams, including source, use, and amounts withdrawn.
	X	X	X	
Technical Assistance Comments: Only required if different from the DNR database. Surface water bodies may be in direct hydraulic connection with the aquifer(s) of concern and withdrawals may affect water levels in both the surface water and adjacent groundwater systems.				
N	D	V	S	G.4: An existing list of lakes and streams for which state protected levels or flows have been established.
	X			
Technical Assistance Comments: This information is available in the public domain and may be used to determine hydraulic connections between surface water bodies and the aquifer(s) of concern.				
N	D	V	S	G.5: An existing description of known water-use conflicts, including those caused by groundwater pumping.
	X	X	X	
Technical Assistance Comments: Please notify MDH of surface water/well interference problems of which the Foley public water system is aware. Conflicts between use of groundwater resources and surface water bodies would indicate a hydrologic boundary that would need to be considered in delineating the WHPA.				
H. GROUNDWATER QUANTITY				
N	D	V	S	H.1: An existing list of wells covered by state appropriation permits, including amounts of water appropriated, type of use, and aquifer source.
	X	X	X	
Technical Assistance Comments: Please submit this information for wells that are not permitted by the DNR because this information may be useful in identifying the hydrologic boundary conditions that could affect the size and shape of the WHPA boundaries.				
N	D	V	S	H.2: An existing description of known well interference problems and water-use conflicts.
	X	X	X	
Technical Assistance Comments: Please notify MDH of well interference problems of which the PWS is aware. Interference problems with other wells, if present, likely indicate a hydrologic boundary that would need to be considered in making the WHPA delineation.				
N	D	V	S	H.3: An existing list of state environmental boreholes, including unique well number, aquifer measured, years of record, and average monthly levels.
	X	X	X	
Technical Assistance Comments: Only submit monthly water level measurements (with unique well numbers and dates) that are not in the public domain.				

DATA ELEMENTS ABOUT WATER QUALITY

I. SURFACE WATER QUALITY				
N	D	V	S	I.1: An existing map or list of the state water quality management classification for each stream and lake.
X				
Technical Assistance Comments:				
N	D	V	S	I.2: An existing summary of lake and stream water quality monitoring data, including:
		X	X	1. bacteriological contamination indicators; 4. sedimentation;
				2. inorganic chemicals; 5. dissolved oxygen; and
				3. organic chemicals; 6. excessive growth or deficiency of aquatic plants.
Technical Assistance Comments: This information can be used to evaluate surface water/groundwater interactions and aquifer water quality. Submit if the Foley public water system has information that is not available in the public domain.				
J. GROUNDWATER QUALITY				
N	D	V	S	J.1: An existing summary of water quality data, including: 1) bacteriological contamination indicators;
	X	X	X	2) inorganic chemicals; and 3) organic chemicals.
Technical Assistance Comments: Submit if the Foley public water system has information that is not available in the public domain because the information may help explain groundwater flow paths.				
N	D	V	S	J.2: An existing list of water chemistry and isotopic data from wells, springs, or other groundwater sampling points.
	X	X	X	
Technical Assistance Comments: Submit if the Foley public water system has information that is not available in the public domain because the information may help explain groundwater flow paths.				
N	D	V	S	J.3: An existing report of groundwater tracer studies.
	X	X	X	
Technical Assistance Comments: Submit if the Foley public water system has information that is not available in the public domain because the information may help explain groundwater flow paths.				
N	D	V	S	J.4: An existing site study and well water analysis of known areas of groundwater contamination.
		X	X	
Technical Assistance Comments: Submit if the Foley public water system has information on contaminant sources not available in the public domain because these reports may contain additional geologic or hydrogeologic information.				
N	D	V	S	J.5: An existing property audit identifying contamination.
X				
Technical Assistance Comments:				
N	D	V	S	J.6: An existing report to the Minnesota Department of Agriculture and the Minnesota Pollution Control Agency of contaminant spills and releases.
	X	X		
Technical Assistance Comments: Notify MDH of reports on spills or contaminant releases that are on-file with the PWS or city but are not in the public domain. These reports do not need to be submitted but MDH staff would like to review reports.				

Summary of Data Request

Specific Data to be Provided to MDH by Foley Public Water System

As discussed during the first Scoping Meeting on January 30, 2007, the PWS will supply the following information for Part I of their Wellhead Protection Plan to the Minnesota Department of Health. The number of the data element that refers to the information needed to prepare the Part I Report is listed in parenthesis at the end of each request.

- 1) Municipal well information: Use Tables 1 and 2, the well records for the Foley public water supply (PWS) wells, and a map showing the locations of all the PWS wells, to review the accuracy of 1) all PWS well construction, 2) well locations, and 3) pumping information. (F.5)

Table 1 lists well use and construction for each of the PWS wells. As we have discussed, MDH does not have a well record for Well No. 3 (240768). If you find either a geologic log or construction record for this well in your files, please forward that information to us.

The enclosed map shows the locations of your public water supply wells. Please let us know if you feel the wells are not correctly located. These locations must be used to delineate your wellhead protection areas.

Table 2 shows the available pumping information and indicates what information the PWS needs to provide for the delineation of the capture zone. Please provide 1) the pumping data for the last two years that was sent to the Minnesota Department of Natural Resources, 2) whether this rate was measured or estimated, and 3) the projected annual pumping amounts for the next five years.

During our recent meeting on February 21, you provided me with a copy of a Foley water supply plan (dated March 2002); however, the pumping projections were not contained in this copy (it appears to be a draft report).

- 2) You have already provided me with copies of a pumping test at the test well (699117) for Well No. 4 (721698). Please forward any other aquifer test or specific capacity information for the PWS wells that may have been obtained during well construction, maintenance, or repair. (B.1)
- 3) During our scoping meeting, you provided me with a copy of the official zoning map (dated August 24, 2006). This map will likely be used, at least in part, to define the Drinking Water Supply Management Area (DWSMA). Please keep us informed of any changes in the city boundaries and/or parcel lines during the development of the Part I WHP Plan. (E.1 and E.2)
- 4) If there are private well records, soil boring reports, geophysical studies, or water level measurements in your files that MDH staff did not identify at the scoping meeting and that would be available for MDH staff to review and copy, please notify MDH. (B.2, B.3, B.4, and H.3)
- 5) Please identify reports that you have on-file relating to leaks/contamination sites that may be a concern to your drinking water supply that MDH may review and copy. (J.4)
- 6) If your files contain water chemistry data, such as bacteria, virus, inorganic, organic, or isotopic results from wells or other groundwater sampling points, that are not currently available to MDH and that MDH may review and copy, please notify MDH. (J.1 and J.2)
- 7) Please provide information about other high-capacity wells in your area that may not be permitted. (H.1)
- 8) Please describe any conflicts over water use that the PWS has been involved with, such as 1) private wells that went dry (or well interference) or 2) springs or wetlands that were affected. Was the Department of Natural Resources involved in resolving the conflict? (G.5 and H.2)
- 9) Please provide average monthly precipitation values from the wastewater treatment facility during the preceding five years, if available. (A.2)

TABLE 1
Public Water Supply Well Information
Foley, Minnesota

Local Well Name	Unique Number	Use/ Status¹	Casing Diameter (inches)	Casing Depth (feet)	Well Depth (feet)	Date Constructed/ Reconstructed	Well Vulnerability	Aquifer Vulnerability
2	224818	P	12	48	63	1969	Vulnerable	High
3	240768	P	16	45	55	1971	Vulnerable	High
4	721698	P	12	50	60	2005	Vulnerable	High

Note: 1. Primary (P) or Emergency Backup (E) Well

TABLE 2
Annual Volume of Water Pumped from Foley PWS Wells
(gallons)

Well Name/ Number	2001	2002	2003	2004	2005	2006*	Projected 2012*
W2 (224818)	33,365,000	22,633,000	32,033,000	26,916,000	34,253,000		
W3 (240768)	44,018,000	53,793,000	57,212,000	54,171,000	43,635,000		
W4 (721698)	Not Constructed	Not Constructed	Not Constructed	Not Constructed	8,273,000		
TOTAL	77,383,000	76,426,000	89,245,000	81,087,000	86,161,000		

Source: The DNR State Water Use Database (SWUDs), Permit Number 783348.

* Data provided by the city.

2. Second MDH Scoping Notice & Notice Attachment

COPY

May 20, 2014

Mr. Mark Pappenfus
Public Works Director
City of Foley
P.O. Box 709
Foley, Minnesota 56329-0709

Dear Mr. Pappenfus:

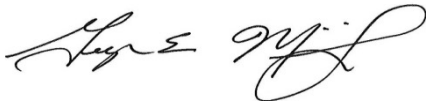
Subject: **Scoping 2 Decision Notice and Meeting Summary – City of Foley– PWSID 1050001**

This letter provides notice of the results of the second scoping meeting I held with you and Bruce Watkins, Acting Administrator on May 1, 2014, at Foley City Hall regarding Part II of your wellhead protection (WHP) plan. During the meeting, we discussed data elements that must be included and used to prepare the part of the WHP plan related to the management of potential contaminants in the approved drinking water supply management area. The enclosed Scoping 2 Decision Notice lists the data elements discussed at the meeting. We also discussed a summary of planning issues that were identified during the Part I WHP Plan development process which should be considered for inclusion in your Part II WHP Plan.

The city of Foley has met the requirements to distribute copies of the first part of the WHP plan to local units of government and hold an informational meeting for the public. The city of Foley will have until September 26, 2016, to complete its WHP plan. The city of Foley was given additional time due to Minnesota Rules, part 4720.5130, subpart 4, item D.

If a data element is marked on the enclosed notice as a data element that must be used and it does not exist, it is helpful if your plan notes this. MDH understands a consultant will be working with you to develop a draft of the remainder of the WHP plan. I will be contacting you to review the progress of the development of Part II of your plan. If you have any questions regarding the enclosed notice, contact me by email at george.minerich@state.mn.us or by phone at 320/223-7314.

Sincerely,



George Minerich, Planner
Source Water Protection Unit
Environmental Health Division
3333 West Division Street - Suite 212
St. Cloud, Minnesota 56301

GEM:ds-b

Enclosures

cc: John Groethe, MDH Engineer, St. Cloud District Office
Ron Struss, Minnesota Department of Agriculture

SCOPING 2 DECISION NOTICE

Variable DWSMA

Remainder of the Wellhead Protection Plan

Name of Public Water Supply:		Date:
City of Foley PWSID 1050001		May 20, 2014
Name of the Wellhead Protection Manager:		
Mark Pappenfus, Public Works Director		
Address:	City:	Zip:
P.O. Box 709	Foley	56329-0709
Unique Well Numbers:		Phone:
240768 (Well 3), 721698 (Well 4), 777222 (Well 5)		(320) 290-9186

Instructions for Completing the Scoping 2 Form

N	R	S	N = Not required. If this box is checked, this data element is NOT necessary for your wellhead protection plan because it is not needed or it has been included in the first scoping decision notice. Please go to the next data element.
X			

N	R	S	R = Required for the remainder of the plan. If this box is checked, this data MUST be used for the "remainder of the plan."
	X		

N	R	S	S = Submit to MDH. If this box is checked, this data element MUST be included in your wellhead protection plan and submitted to MDH.
		X	
If there is NO check mark in the "S" box but there is an "X" in the "R" box, this data element MUST be included in your plan, but should NOT be submitted to MDH . This box will only be checked if MDH does not have access to this data element. This will help to reduce the cost by reducing the amount of paper and time to reproduce the data element.			

Note: Any data elements required in the first scoping decision notice must also be used to complete the remainder of the wellhead protection plan.

DATA ELEMENTS ABOUT THE PHYSICAL ENVIRONMENT

PRECIPITATION			
N	R	S	An existing map or list of local precipitation gauging stations.
	X	X	
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing table showing the average monthly and annual precipitation in inches for the preceding five years.
	X	X	
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
GEOLOGY			
N	R	S	An existing geologic map and a description of the geology, including aquifers, confining layers, recharge areas, discharge areas, sensitive areas as defined in Minnesota Statutes, section 103H.005, subdivision 13, and groundwater flow characteristics.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			
N	R	S	Existing records of the geologic materials penetrated by wells, borings, exploration test holes, or excavations, including those submitted to the department.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			
N	R	S	Existing borehole geophysical records from wells, borings, and exploration test holes.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect the geology of the areas.			
N	R	S	Existing surface geophysical studies.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect the geology of the areas.			
SOILS			
N	R	S	Existing maps of the soils and a description of soil infiltration characteristics.
	X	X	
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	A description or an existing map of known eroding lands that are causing sedimentation problems.
	X	X	
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			

WATER RESOURCES			
N	R	S	An existing map of the boundaries and flow directions of major watershed units and minor watershed units.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing map and a list of public waters as defined in Minnesota Statutes, section 103G.005, subdivision 15, and public drainage ditches.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	The shoreland classifications of the public waters listed under subitem (2), pursuant to part 6120.3000 and Minnesota Statutes, sections 103F.201 to 103F.221.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing map of wetlands regulated under Chapter 8420 and Minnesota Statutes, section 103G.221 to 103G.2373.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing map showing those areas delineated as floodplain by existing local ordinances.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			

DATA ELEMENTS ABOUT THE LAND USE

LAND USE			
N	R	S	An existing map of parcel boundaries.
	X	X	
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing map of political boundaries.
	X	X	
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing map of public land surveys including township, range, and section.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			

N	R	S	A map and an inventory of the current and historical agricultural, residential, commercial, industrial, recreational, and institutional land uses and potential contaminant sources.
	X	X	
<p>Technical Assistance Comments: The inventory, mapping and management of land uses and potential sources of contamination for all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements, as follows:</p> <p><u>Mixed Vulnerability</u> - 1) All potential contaminant sources and facility designations as listed on the attachments, 2) a land use/land cover map and table, and 3) an inventory of the Inner Wellhead Management Zone (IWMZ).</p> <p>As a starting point, MDH will provide a 2006 land cover map and table from federal data bases. This data set must be used unless an alternative electronic data set that is more current and detailed is available.</p> <p>Management strategies must be developed for all land uses and potential sources of contamination.</p>			
	R	S	An existing comprehensive land-use map.
	X	X	
<p>Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.</p>			
N	R	S	Existing zoning map.
	X	X	
<p>Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.</p>			
PUBLIC UTILITY SERVICES			
N	R	S	An existing map of transportation routes or corridors.
	X		
<p>Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.</p>			
N	R	S	An existing map of storm sewers, sanitary sewers, and public water supply systems.
	X	X	
<p>Technical Assistance Comments: It is not necessary to include a map of your public water supply system in your plan if you feel it would pose a threat to the security of your system. An existing map of the storm sewers and sanitary sewers in the Drinking Water Supply Management Area(s) must be included in the wellhead protection plan and must also be submitted to the MDH as part of the approval.</p>			
N	R	S	An existing map of the gas and oil pipelines used by gas and oil suppliers.
	X	X	
<p>Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.</p>			
N	R	S	An existing map or list of public drainage systems.
	X	X	
<p>Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.</p>			

N	R	S	An existing record of construction, maintenance, and use of the public water supply well and other wells within the drinking water supply management area.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			

DATA ELEMENTS ABOUT WATER QUANTITY

SURFACE WATER QUANTITY			
N	R	S	An existing description of high, mean, and low flows on streams.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing list of lakes where the state has established ordinary high water marks.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing list of permitted withdrawals from lakes and streams, including source, use, and amounts withdrawn.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing list of lakes and streams for which state protected levels or flows have been established.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing description of known water-use conflicts, including those caused by groundwater pumping.
	X	X	
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
GROUNDWATER QUANTITY			
N	R	S	An existing list of wells covered by state appropriation permits, including amounts of water appropriated, type of use, and aquifer source.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing description of known well interference problems and water-use conflicts.
	X	X	
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			

N	R	S	An existing list of state environmental bore holes, including unique well number, aquifer measured, years of record, and average monthly levels.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			

DATA ELEMENTS ABOUT WATER QUALITY

SURFACE WATER QUALITY			
N	R	S	An existing map or list of the state water quality management classification for each stream and lake.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing summary of lake and stream water quality monitoring data, including: 1. bacteriological contamination indicators; 4. sedimentation; 2. inorganic chemicals; 5. dissolved oxygen; and 3. organic chemicals; 6. excessive growth or deficiency of aquatic plants.
	X		
Technical Assistance Comments: The management of the vulnerable parts of the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
GROUNDWATER QUALITY			
N	R	S	An existing summary of water quality data, including: 1. bacteriological contamination indicators; 2. inorganic chemicals; and 3. organic chemicals.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing list of water chemistry and isotopic data from wells, springs, or other groundwater sampling points.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing report of groundwater tracer studies.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing site study and well water analysis of known areas of groundwater contamination.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			
N	R	S	An existing property audit identifying contamination.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	R	S	An existing report to the Minnesota Department of Agriculture and the Minnesota Pollution Control Agency of contaminant spills and releases.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management			

Area(s) must reflect what is known about this data element.

Other: MDH Hydro Recommendations

Listed below are recommended measures for the wellhead team to consider for inclusion in the Part 2 Wellhead Protection (WHP) Plan. These recommendations would help:

- 1) identify the source(s) of elevated chlorides in the city's Well 3 and Well 4 (240768 and 721698),
- 2) improve our understanding of the surface-groundwater interaction between the city wells and area surface water features,
- 3) to map potential areas of focused infiltration to highly vulnerable areas of the aquifer,
- 4) plan for a replacement municipal well(s), and
- 5) to identify new high capacity wells in the Foley area and their potential impact on the WHPAs.

Overall, these data collection measures will help improve our understanding of existing impacts to the public wells by land use activities and serve to better plan for the long-term protection of the city's drinking water supply. MDH SWP Grants may be one funding mechanism to help cover some of the costs associated with carrying out these activities.

Recommended Measures for Data Collection:

1. Background. Limited monitoring of the city's water supply wells indicates elevated chlorides and bromide concentrations in Wells 3 and 4 (240768 and 721698). These results suggest a connection between the wells and land use activities, particularly in the case of Well 3 (240768). The source(s) of the chlorides has not been identified; the chlorides could be resulting from road salts, septic or wastewater impacts, stormwater, agricultural activities, or even from surface water features. In contrast, the chloride-bromide results at Well 4 (721698) are also elevated, but may be indicative of water contribution from the underlying granitic bedrock rather than land use impacts. Additional monitoring of chloride - bromide levels, along with strontium isotopes, may help us to gain a better understanding of whether land use activities are impacting the wells.

City of Foley
Summary of Cl/Br, TOC and Isotope Results

Name	Chloride (mg/l)		Bromide (mg/l)		Chloride/ Bromide (Cl/Br) Ratio	
Well 3 (240768)	95.6 (6/2013)	62.6 (1/2010)	0.12 (6/2013)	0.0642 (1/2010)	797 (6/2013)	975 (1/2010)
Well 4 (721698)	58.8 (6/2013)		0.286 (6/2013)		203 (6/2013)	
Well 5 (777222)	22.8 (6/2013)	23.5 (4/2012)	0.0581 (6/2013)	0.0605 (4/2012)	380 (6/2013)	388 (4/2012)

1a. Measure: Contact MDH Hydrologist to prepare a monitoring plan to assess the relationship between the aquifer used by the city's wells and potential sources of chloride. The plan will likely involve quarterly monitoring for a period of at least one year in order to get a better understanding of whether the occurrence of elevated chlorides is seasonal. The monitoring planning team should also assess whether additional funding or resources are needed to implement the monitoring plan.

Responsible Party: WHP Manager

Cooperators: City staff, MDH Hydrologist, other local resource partners (?)

Cost: City staff time.

Year: 2017

1b. Measure: Pending available funding, coordinate with MDH staff and local partners to implement the monitoring plan, including the collection of water samples and assessment of the results.

Responsible Party: City Staff

Cooperators: MDH, other local partners?

Cost: City staff time. The analytical cost for samples run through the MDH lab will be covered by MDH.

Year: 2017-2018

1c. Measure: Pending the implementation of *Measure 1b*, coordinate a meeting with the WHP Team, and MDH Hydrologist and Planner to assess the results of the monitoring study. Identify: 1) how the results can be applied to help further protect the city's aquifer and water supply, 2) additional monitoring that may be needed, 3) activities that can be completed as part of current plan implementation efforts, and 4) activities that will need to be incorporated into the city's wellhead plan amendment in 2026.

Responsible Party: WHP Manager

Cooperators: MDH, ?Other Resource Partners

Cost: City Staff time. Other costs TBD.

Year: 2018-2019

2. Background. In 2006, city Wells 3 and 4 (240768 and 721698) were sampled to measure the stable isotopes of hydrogen and oxygen as an initial assessment of potential surface water contribution to the wells. The results indicated the lack of surface water contribution, or at least a nominal contribution, if any. Local surface water features were not monitored as part of this previous sampling effort. Additional sampling of the city wells and local surface water features (such as Stony Brook, the nearby treatment pond) is recommended to confirm initial results and allow for a more accurate assessment of possible surface water contribution.

Measure: As part of measures 1a-1c, include a second goal in the monitoring plan of gaining a better understanding of potential surface water contribution to the city wells, if any. The plan will likely involve quarterly monitoring for a period of at least two quarters. The monitoring planning team should also assess whether additional funding or resources are needed to implement the monitoring plan.

Responsible Party: WHP Manager

Cooperator: City staff, MDH

Cost:

Time line: 2017-2019

3. Background. A portion of the east DWSMA has been classified as highly vulnerable. Within this area, there is very little natural geologic protection between the land surface and the aquifer serving the city wells, particularly in the vicinity of Well 3 (240768). Opportunities for focused recharge by runoff are a concern within high vulnerability areas. For the most part, it was determined that runoff is currently being routed by the existing stormwater infrastructure; however, the exception may be in the southeast portion of the DWSMA. Therefore, it is recommended that the city include a measure in their plan to evaluate the potential for surface runoff to the aquifer in areas lacking existing stormwater infrastructure. (See discussion on page 11 of the Part 1 Report).

Measure: Assess the potential for runoff to infiltrate within the vulnerable portions of the DWSMA lacking existing stormwater infrastructure. This assessment involves a field inspection, and an evaluation of the ability of existing soils and subsurface geologic materials to retard the vertical movement of contaminants. Pending

results, assess the need for expanding the wellhead protection area to include land area that may be contributing surface runoff to the aquifer.

Responsible Party: WHP Manager

Cooperator: City staff, MDH

Cost:

Time line:

4. Tritium Sampling. Before work begins on the wellhead plan amendment (due in 2026), contact MDH hydrologist to schedule tritium sampling of all municipal wells. Re-sampling the wells for tritium will give an indication of whether there have been changes over time brought on by pumping, particularly in the case of Well 5 (777222).

Responsible Party: WHP Manager

Cooperator: MDH

Cost:

Time line: 2023-2024 (7th or 8th year).

5. Planning for a Replacement Well. City Well 3 (240768) is the city's oldest well (> 40 years old). In the event that this well fails, it is possible that it may not be repairable because of its age. It is recommended the city include a measure(s) in their plan to begin exploring suitable sites for a replacement well. By doing so, it may provide opportunities for the city to receive grant funding for the exploratory work needed to find a good, clean water supply well. This may include financial assistance with the construction and assessment of test wells and water quality sampling.

Measure: Provide for the long term protection of Foley's public water supply by planning for an alternate wellfield site for future replacement of existing Well 3 (240768). Pending available funding and resources, this measure will likely involve a step-wise approach to identifying candidate well sites, including water quality sampling of existing wells (including non-public wells) and the construction of test wells. When a promising new well site is identified, this measure will also include additional water quality sampling of the test well and capacity (aquifer) testing to determine potential yield and suitability as a municipal water supply well.

Responsible Party: WHP Manager

Cooperator: City staff, engineering firm, MDH staff

Cost:

Time line: ? On-going activity, pending funding and resources

Other Recommended Measures:

6. Notification and Evaluation of Proposed High Capacity Wells. The city, local well drillers, and regulating agencies will coordinate efforts to receive notification of proposed high capacity wells. If a high capacity well is identified near or within the DWSMA boundaries, the WHP Manager will alert MDH Source Water staff. The MDH will collaborate with the MN DNR Water Appropriations Program to evaluate the likelihood that proposed pumping will: 1) interfere with the capacity of any existing city well, 2) modify the boundaries of the WHPA/DWSMA, and/or 3) impact the vulnerability of the aquifer serving the city's wells. MDH, DNR, and high capacity well owner will work to minimize potential impacts pumping may have on water quantity or quality of the public water supply.

Responsible Party: WHP Manager

Cooperator: City staff, DNR, MDH, local well drillers

Cost:

Time line: ? On-going activity, pending funding and resources

Note about PCSI Well Locating Efforts:

It should be noted that city staff has already completed a fairly thorough inventory of existing wells as part of work done to find a suitable location for Well 5 (777222). City staff collaborated with MGS field staff and MDH. Most of the field work was done in 2007-2010, and the well locations have been entered into the CWI database.

City staff also collaborated with MPCA to identify potential receptors (i.e. private wells) in town relative to groundwater releases at the leaky tank site near former Well 2 (224818).

Potential Contaminants Located within the City of Foley DWSMA

VULNERABILITY	PCS MATERIAL CODE	FACILITY CODE	PARCEL ID	MPCA_ID	PERMIT NAME	PROPERTY ADDRESS	ACTIVITY	STATUS	ZONING*	PRIMARY TAXPAYER
HIGH	SPL / LUST	2110	13.00019.00	17284	Auto Value Store	311 Norman Ave N	LEAK (I), TANKS REMOVED	Inactive	HBD	TIMOTHY D FEDDEMA
HIGH	HWG		13.00040.15	148505639	Fleege Distributing Co	421 Norman Ave N	HWG (A)	Active	HBD	ROBERT F FLEEGE &
HIGH	HWG	4000	13.00040.16	MND985750512	MNDOT District 3b Foley	531 Norman Ave	HWG (A)	Active	HBD	STATE OF MINNESOTA
HIGH	SPL / LUST	4000	13.00040.16	1688	MNDOT District 3b Foley	531 Norman Ave	LEAK (I)	Inactive	HBD	STATE OF MINNESOTA
MOD	SPL / LUST	2116	13.00043.00	9334	Conoco Station/Brenny Oil Co	71 Norman Ave	LEAK (I)	Inactive	HBD	ROBERT S BRENNY &
MOD	UST-F000	2116	13.00043.00	14715	Conoco Station/Brenny Oil Co	71 Norman Ave	UST (8) (A)	Active	HBD	ROBERT S BRENNY &
HIGH	SPL / LUST	2116	13.00077.00	15436	Federated Coops Bulk Site	County Road 4	LEAK (I), TANKS REMOVED	Inactive	LID	FEDERATED COOPERATIVES
HIGH	HWG	2418	13.00131.00	HWLIC1002500	Mille Lacs Veterinary Clinic - Dewey St	310 Dewey St	HWG (A)	Active	CBD	M L V HOLDINGS LLC
HIGH	SPL / LUST	2000	13.00189.00	16544	Markfort Property	241 2nd Ave	LEAK (I)	Inactive	CBD	GREGORY M WENNER &
HIGH	HWG	6000	13.00210.01	MN0000854679	Foley city of	321 4th Ave N	HWG (I)	Inactive	SFRD	CITY OF FOLEY
HIGH	HWG	2110-01	13.00218.00	MND981532138	LaVigne's Garage (5 Star Auto Repair)	321 Broadway	HWG (A)	Active	SFRD	KEVIN STARR &
HIGH	SPL / LUST	2116	13.00220.00	5604	Benton County Coop	411 John St	LEAK (I)	Inactive	CBD	CITY OF FOLEY EDA
HIGH	HWG	2116	13.00225.00	MNR000013458	Caseys General Store	410 Martin St	HWG (I)	Inactive	CBD	CASEYS RETAIL COMPANY
HIGH	UST-F000	2116	13.00225.00	19188	Caseys General Store	410 Martin St	UST (2) (A)	Active	CBD	CASEYS RETAIL COMPANY
HIGH	HWG	2000	13.00239.00	MNNO5294	Benton County News Inc	220 Broadway Ave	HWG (I)	Inactive	CBD	MARY ANN YOUSO
HIGH	HWG	2000	13.00275.00	MNR000119412	Foley Drug Co LLC	351 Dewey St	HWG (A)	Active	CBD	THOMAS J YOUNG &
HIGH	HWG	2000	13.00276.00	MNS000132647	Steven W O'Brien DDS	311 Dewey St	HWG (A)	Active	CBD	STEVEN W O'BRIEN &
HIGH	SWB	3000	13.00300.00	MNRNE33XR	Amex Industries Inc.	136 Broadway Ave	IND STORM (A)	Active	LID	NOEL C LEWANDOWSKI &
HIGH	SPL / LUST	1100	13.00302.01	4170	Foley Middle School	520 Dewey St	LEAK (2) (I)	Inactive	SFRD	STONY CREEK OF BENTON CO LLC
HIGH	SPL / LUST	vacant	13.00077.01	122	Public Supply Well Contamination	320 Broadway Ave N	LEAK (I)	Inactive	AG	STONY CREEK OF BENTON CO LLC
HIGH	SPL / LUST	6000	13.00497.53	2205	Benton County	241 6th Ave	LEAK (I)	Inactive	CBD	BENTON COUNTY
HIGH	HWG	2000	13.00526.00	MND985720291	Smith Dental Clinic of Foley Ltd	430 Broadway Ave N	HWG (A)	Active	SFRD	SMITH PROPERTIES OF FOLEY LLC
MOD	SPL / LUST	1100-02	13.00740.00	1377	Foley Railroad Yard	170 Main St	LEAK (I), TANKS REMOVED	Inactive	1&2FRD	BIG NORWAY LLC
MOD	CERCL	1100-02	13.00742.00	MND981961659	Foley RR Improvement Project	Norman Ave at Main St	CERCLIS Site	Inactive	1&2FRD	FALCONSHIRE PARTNERSHIP
HIGH	HWG	6000	13.00871.00	MND985758515	ISD 51 Foley High School	621 Penn Ave N	HWG (A)	Active	SFRD	IS D 51
HIGH	AST-F000	6000	13.00871.00	55186	ISD 51 Foley High School	621 Penn Ave N	AST (A)	Active	SFRD	IS D 51
MOD	UST-F000	6000	13.00871.00	15097	Foley Elementary Schools & Bus	757 Penn St	UST (2) (A)	Active	SFRD	IS D 51
				UNIQUE WELL NO			DEPTH FT. USE			
HIGH	WEL	4000	13.00077.01	240768	City of Foley	Foley #3	55 Public Supply	Primary	LID	CITY OF FOLEY
HIGH	WEL	4000	13.00030.02	721698	City of Foley	Foley #4	60 Public Supply	Primary	CBD	CITY OF FOLEY
MOD	WEL	4000	02.00631.00	777222	City of Foley	Foley #5	108 Public Supply	Primary	AG	CITY OF FOLEY
MOD	WEL	1100-01	02.00347.00	00178450	Fleege, Theresa	920 Grand Street	63 Domestic	Active	AG	THERESA M FLEEGE
MOD	WEL	4000	13.00015.14	00224813	Foley TW-5	931 Norman Ave N	68 Test Well	Inactive	SFRD	NEW LIFE CHURCH OF FOLEY
MOD	WEL	2000	13.00040.05	00171984	State Bank of Foley	59 Hwy 23 West	49 Domestic	Active	HBD	FRANDSEN BANK & TRUST
MOD	WEL	4000	13.00041.83	00224814	Foley	161 4th Avenue South	338 Observation	Active	SFRD	CITY OF FOLEY
MOD	WEL	vacant	02.00348.00	00157348	Monroe, Tom	12675 65th Street NE	50 Domestic	Active	AG	BRIAN WALDOCH
HIGH	WEL	1100-01	13.00346.00	00224812	Gundich	476 Grand Street	38 Domestic	Active	SFRD	ROBERT P TWEDT
MOD	WEL	4000	13.00071.00	00224816	Foley TW-3	840 Norman Avenue N	92 Test Well	Inactive	SFRD	IS D 51
MOD	WEL	6000	13.00225.01	00400509	Foley Police Station	531 Dewey Street	51 Public	Active	CBD	BENTON COUNTY
MOD	WEL	4000	13.00871.00	00224817	Foley TW-1	840 Norman Avenue N	60 Test Well	Inactive	SFRD	IS D 51
MOD	WEL	1100-01	02.00474.00	00268545	Bartell (Parents) Residence Well	10430 65th Street NE	0 Domestic	Active	AG	FOLEY THREE LLC
MOD	WEL	1100-01	02.00477.00	00268542	Nick Heroux	9872 65th Street NE	0 Domestic	Active	AG	HEATHER N EICH
MOD	WEL	1100-01	02.00398.01	00643671	Grundhoefer, Eric	10033 65th Street NE	72 Domestic	Active	AG	ERIC H GRUNDHOFER
MOD	WEL	1100-01	02.00474.00	00578768	Bartell, Russell	10430 65th Street NE	69 Domestic	Active	AG	FOLEY THREE LLC
MOD	WEL	9000	02.00401.00	00268544	Milo Wade - Livestock	9901 65th Street NE	0 Domestic	Active	AG	CECIL A WADE
MOD	WEL	1100-01	02.00398.03	00711357	Runnels, Steve	10151 65th Street NE	55 Domestic	Active	AG	STEVEN R RUNNELS &
MOD	WEL	1100-01	02.00477.00	00623275	Heroux, Nicholas	9872 65th Street NE	91 Domestic	Active	AG	HEATHER N EICH
MOD	WEL	1100-01	02.00401.00	00268543	Milo Wade	9901 65th Street NE	0 Domestic	Active	AG	CECIL A WADE
MOD	WEL	1100-01	02.00398.02	00689133	Abfalter, Jim	10179 65th Street NE	71 Domestic	Active	AG	JAMES J ABFALTER &
MOD	WEL	1100-01	13.00011.00	Unknown	Unknown Unverified	431 Broadway Ave S	Unknown	Inactive	1&2FRD	KENNETH MONROE

Potential Contaminants Located within the City of Foley DWSMA

VULNERABILITY	PCS MATERIAL CODE	FACILITY CODE	PARCEL ID	UNIQUE WELL NO	PERMIT NAME	PROPERTY ADDRESS	WELL NAME	DATE SEAL	SEALING RECORD LOCATED	ZONING	PRIMARY TAXPAYER
HIGH	WEL(sealed)	4000	13.00497.52	00751865	MW-5		MW-5		YES	SFRD	STONY CREEK OF BENTON CO LLC
HIGH	WEL(sealed)	4000	13.00220.00	00751304	MW-11(S)	411 John Street	MW-11(S)		YES	CBD	CITY OF FOLEY EDA
HIGH	WEL(sealed)	4000	13.00222.01	00762224	MW	310 4th Avenue North	MW		YES	CBD	CITY OF FOLEY
HIGH	WEL(sealed)	4000	13.00220.00	00751869	MW-6	411 John Street	MW-6		YES	CBD	CITY OF FOLEY EDA
HIGH	WEL(sealed)	4000	13.00475.00	00762225	MW	402 4th Avenue North	MW		YES	SFRD	JAMES ALBERT NATHE &
HIGH	WEL(sealed)	4000	13.00218.00	00751860	MW-8	321 Broadway Ave N	MW-8		YES	CBD	KEVIN STARR &
HIGH	WEL(sealed)	4000	13.00523.01	00751305	MW-9(D)	471 Hwy 23	MW-9(D)		YES	CBD	FOLEY MEDICAL BUILDING LLC
HIGH	WEL(sealed)	4000	13.00220.00	00751868	MW-7(S)	411 John Street	MW-7(S)		YES	CBD	CITY OF FOLEY EDA
HIGH	WEL(sealed)	2000	13.00030.01	00224811	Holdridge, Charlie	581 Hwy 23	HOLDRIDGE, CHARLEY		YES	CBD	BENTON COUNTY
HIGH	WEL(sealed)	4000	13.00497.53	00762222	MW	321 6th Avenue	MW		YES	CBD	BENTON COUNTY
HIGH	WEL(sealed)	4000	13.00497.50	00751863	MW-1		MW-1		YES	SFRD	STONY CREEK OF BENTON CO LLC
HIGH	WEL(sealed)	4000	13.00218.00	00751302	MW-12(D)	321 Broadway Ave N	MW-12(D)		YES	CBD	KEVIN STARR &
HIGH	WEL(sealed)	4000	13.00497.51	00751861	MW-2	320 Broadway Ave N	MW-2		YES	SFRD	CITY OF FOLEY
HIGH	WEL(sealed)	4000	13.00497.51	00751867	MW-3	320 Broadway Ave N	MW-3		YES	SFRD	CITY OF FOLEY
HIGH	WEL(sealed)	4000	13.00027.00	00762221	MW	510 Broadway Ave N	MW		YES	SFRD	CORY L ROSE
HIGH	WEL(sealed)	4000	13.00497.51	00751866	MW-4	320 Broadway Ave N	MW-4		YES	SFRD	CITY OF FOLEY
HIGH	WEL(sealed)	4000	13.00474.00	00762226	MW	401 Broadway Ave N	MW		YES	SFRD	KENNETH T WILLIAMS &
HIGH	WEL(sealed)	4000	13.00220.00	00751303	MW-10(D)	411 John Street	MW-10(D)		YES	CBD	CITY OF FOLEY EDA
HIGH	WEL(sealed)	4000	13.00019.00	00775965	MW-2	311 Norman Avenue N	MW-2		YES	HBD	TIMOTHY D FEDEDEMA
HIGH	WEL(sealed)	4000	13.00019.00	00775963	MW-3	311 Norman Avenue N	MW-3		YES	HBD	TIMOTHY D FEDEDEMA
HIGH	WEL(sealed)	4000	13.00019.00	00775964	MW-1	311 Norman Avenue N	MW-1		YES	HBD	TIMOTHY D FEDEDEMA
MOD	WEL(sealed)	2000	13.00049.00	00716464	Brenny, Rob	38 Glen Street	BRENNY, ROB		YES	SFRD	ROBERT S BRENNY &
MOD	WEL(sealed)	2000	13.00043.00	00716465	Brenny, Rob	71 Norman Avenue N	BRENNY, ROB		YES	HBD	ROBERT S BRENNY &
MOD	WEL(sealed)	2000	13.00046.00	00716463	Brenny, Rob	71 Norman Avenue N	BRENNY, ROB		YES	HBD	ROBERT S BRENNY &
MOD	WEL(sealed)	2000	13.00086.00	00716462	Brenny, Rob	41 Glen Street	BRENNY, ROB		YES	SFRD	THEODORE GARCEAU &
HIGH	WEL(sealed)	4000	13.00264.00	00224819	Foley - 1	241 4th Avenue North	FOLEY - 1		YES	CBD	FUTURE OF FOLEY, INC
HIGH	WEL(sealed)	4000	13.00218.00	00329482	SB 7	321 Broadway Ave N	SB 7		YES	CBD	KEVIN STARR &
HIGH	WEL(sealed)	4000	13.00497.53	00527857	MW-16	441 4th Avenue North	MW-16		YES	CBD	
HIGH	WEL(sealed)	4000	13.00497.53	00561679	Benton Hwy Department	321 6th Avenue	BENTON HWY DEPT		YES	CBD	BENTON COUNTY

*Zoning Districts: HBD= Highway Business, LID= Light Industrial, CBD= Central Business, SFRD= Single Family Residential, AG= Agriculture, 1&2FRD =1&2 Family Residential.

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
13.00172.00	SCOTT G SWANSON	120 3RD AVE	PO BOX 385	FOLEY	MN	56329
13.00173.00	SCOTT G SWANSON	120 3RD AVE	PO BOX 385	FOLEY	MN	56329
13.00174.00	ROBERT J SCHREIFELS &	140 3RD AVE	PO BOX 386	FOLEY	MN	56329
13.00175.00	MILLERS CUTTING EDGE SALON LLC	1145 GARDEN BROOK DR		SAUK RAPIDS	MN	56379
13.00176.00	PATRICK R MASTEY	2759 CLEARWATER RD		ST CLOUD	MN	56301
13.00178.00	NOEL C LEWANDOWSKI &	C/O A M A X INDUSTRIES	PO BOX 252	FOLEY	MN	56329
13.00179.00	NOEL C LEWANDOWSKI &	C/O A M A X INDUSTRIES	PO BOX 252	FOLEY	MN	56329
13.00179.01	TERRY G SAUER	17002 65TH AVE NE		RICE	MN	56367
13.00180.00	COTA PROPERTIES LLC	11262 LAURA CIRCLE		BECKER	MN	55308
13.00180.01	BENTON AGENCY INC	112 4TH AVE N	PO BOX 445	FOLEY	MN	56329
13.00184.00	BRADLEY J SCHINDELE &	9007 100TH AVE SE		CLEAR LAKE	MN	55319
13.00185.00	JPMORGAN CHASE BANK NA	10790 RANCHO BERNARDO RD		SAN DIEGO	CA	92127
13.00186.00	DIANE M MILEJCZAK	321 2ND AVE	PO BOX 585	FOLEY	MN	56329
13.00187.00	HOLLY A GUNTHER		PO BOX 364	FOLEY	MN	56329
13.00188.00	GREG M WENNER &	221 2ND AVE	PO BOX 307	FOLEY	MN	56329
13.00188.01	JIM JENSON REV TR &	238 NORMAN AVE N	PO BOX 434	FOLEY	MN	56329
13.00478.00	HAROLD WYATT ETAL	430 4TH AVE NE		FOLEY	MN	56329
13.00479.00	CAROL A HELMIN REVOC TR	440 4TH AVE		FOLEY	MN	56329
13.00263.01	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00263.02	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00264.00	FUTURE OF FOLEY INC	21373 AGATE BEACH RD		ST CLOUD	MN	56301
13.00265.00	FUTURE OF FOLEY INC	21373 AGATE BEACH RD		ST CLOUD	MN	56301
13.00267.00	PATRICK M DOMBROVSKI &	150 8TH AVE	PO BOX 617	FOLEY	MN	56329
13.00268.00	THOMAS J YOUNG	351 DEWEY ST	PO BOX 217	FOLEY	MN	56329
13.00271.00	G T INVESTMENT PROPERTIES LLC		PO BOX 217	FOLEY	MN	56329
13.00274.00	ROBERT J BANIK &	7320 GALLAGHER DR APT102		EDINA	MN	55435
13.00275.00	THOMAS J YOUNG &	651 NORMAN AVE	PO BOX 217	FOLEY	MN	56329
13.00276.00	STEVEN W O'BRIEN &		PO BOX 649	FOLEY	MN	56329
13.00277.00	U S WEST COMMUNICATIONS INC		PO BOX 7909	OVERLAND PARK	KS	66207
13.00280.00	NORTHWESTERN BELL TELEPHONE CO	1801 CALIFORNIA ST	STE 2500	DENVER	CO	80202
13.00282.00	SHANTEL MALIKOWSKI		PO BOX 15	FOLEY	MN	56329
13.00283.00	DOLORES M KAPROTH	240 3RD AVE	PO BOX 354	FOLEY	MN	56329
13.00284.00	KATHY A BRENNY	250 3RD AVE	PO BOX 538	FOLEY	MN	56329
13.00285.00	DAVID L ERICKSON ETAL		PO BOX 855	FOLEY	MN	56329
13.00286.00	KENNETH M HARTMAN &	231 3RD AVE	PO BOX 38	FOLEY	MN	56329
13.00287.00	JANE F MARKFORT	211 3RD AVE	PO BOX 519	FOLEY	MN	56329
13.00288.00	DEREK A BRENNY	201 3RD AVE	PO BOX 526	FOLEY	MN	56329
13.00289.00	BRIAN J WEIS &	201 DEWEY ST	PO BOX 627	FOLEY	MN	56329
13.00290.00	HAROLD KRUSCHKE &	5795 30TH ST		PRINCETON	MN	55371
13.00291.00	JAYSON L STRICKER	220 2ND AVE	PO BOX 371	FOLEY	MN	56329
13.00292.00	ANDREW SANDBERG		PO BOX 120	FOLEY	MN	56329
13.00293.00	C F R LLC		PO BOX 278	FOLEY	MN	56329
13.00293.50	I S D 51	840 NORMAN AVE N	PO BOX 297	FOLEY	MN	56329
13.00299.00	R G SHERK LLC		PO BOX 278	FOLEY	MN	56329
13.00300.00	NOEL C LEWANDOWSKI &	C/O A M A X INDUSTRIES	PO BOX 252	FOLEY	MN	56329
13.00301.00	NOEL C LEWANDOWSKI &	C/O A M A X INDUSTRIES	PO BOX 252	FOLEY	MN	56329
13.00302.00	MATHIAS J MIMBACH	7 SKYVIEW DR		SAUK RAPIDS	MN	56379
13.00302.01	STONY CREEK OF BENTON CO LLC	7751 440TH ST	PO BOX 2	RICE	MN	56367
13.00303.00	KELLY A YAEGER &		PO BOX 98	FOLEY	MN	56329
13.00304.00	JEROME S MECHAVICH &	520 MAIN ST	PO BOX 474	FOLEY	MN	56329
13.00146.00	JOHN H ABFALTER &	110 NORMAN AVE N		FOLEY	MN	56329
13.00147.00	JOHN H ABFALTER &	110 NORMAN AVE N		FOLEY	MN	56329
13.00148.00	JOHN H ABFALTER &	110 NORMAN AVE N		FOLEY	MN	56329
13.00149.00	JOHN H ABFALTER &	110 NORMAN AVE N		FOLEY	MN	56329
13.00150.00	JULIE J MARQUETTE &	150 DEWEY ST		FOLEY	MN	56329
13.00152.00	JENNIFER L KERN	121 2ND AVE		FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
13.00153.00	BRADLEY A KADLEC &	111 2ND AVE	PO BOX 583	FOLEY	MN	56329
13.00154.00	AMBER J WOJCIECHOWSKI	19082 95TH ST NE		OAK PARK	MN	56357
13.00155.00	DANIEL A SZCZECZ &	161 MAIN ST		FOLEY	MN	56329
13.00441.00	STEVE WILTGEN &		PO BOX 244	FOLEY	MN	56329
13.00442.00	DAVID J BRAMBRINK	430 3RD AVE	PO BOX 10	FOLEY	MN	56329
13.00443.00	RODNEY M STAY &	17794 90TH ST NE		FOLEY	MN	56329
13.00444.00	CHURCH OF ST JOHN		PO BOX 337	FOLEY	MN	56329
13.00446.00	MICHAEL J WESTRA &	651 BROADWAY AVE	PO BOX 616	FOLEY	MN	56329
13.00448.00	CHELSEY M MOELLER &	631 BROADWAY AVE		FOLEY	MN	56329
13.00449.00	ENGELSGJERD PROPERTY LLC	12828 COUNTY RD 51		ST JOSEPH	MN	56374
13.01102.00	EVELYN H KIRBY	50 BROADWAY AVE N	PO BOX 296	FOLEY	MN	56329
13.01103.00	CHARLES DOTZLER		PO BOX 37	FOLEY	MN	56329
13.01104.00	JOSEPH GOTVALD &	34 BROADWAY AVE S		FOLEY	MN	56329
02.00397.02	BRAD DEYAK &	6936 95TH AVE NE		FOLEY	MN	56329
02.00398.01	ERIC H GRUNDHOEFER	10033 65TH ST NE		FOLEY	MN	56329
13.00189.00	GREG M WENNER &	221 2ND AVE	PO BOX 307	FOLEY	MN	56329
13.00190.00	GREGORY M WENNER &	221 2ND AVE	PO BOX 307	FOLEY	MN	56329
13.00191.00	GREGORY M WENNER &	221 2ND AVE	PO BOX 307	FOLEY	MN	56329
13.00193.00	SCOTT M MINEART	191 DEWEY ST	PO BOX 645	FOLEY	MN	56329
13.00194.00	JOHN C SR RIEBEL	18866 75TH ST		BECKER	MN	55308
13.00204.00	JOAN DOUBEK		PO BOX 241	FOLEY	MN	56329
13.00205.00	JUDY WEIS		PO BOX 627	FOLEY	MN	56329
13.00206.00	JUDY WEIS		PO BOX 627	FOLEY	MN	56329
13.00207.00	JUDY WEIS		PO BOX 627	FOLEY	MN	56329
13.00351.00	HEATHER J MARTELL	130 BROADWAY AVE S		FOLEY	MN	56329
13.00140.00	CROSS OF BENTON COUNTY	150 4TH AVE	PO BOX 205	FOLEY	MN	56329
13.00141.00	RYAN R STUCKMAYER	29227 93RD ST		PIERZ	MN	56364
13.00142.00	EDWIN D STARR		PO BOX 509	FOLEY	MN	56329
13.00143.00	JULIE J MARQUETTE &	150 DEWEY ST		FOLEY	MN	56329
13.00144.00	CENTRA SOTA COOPERATIVE	510 SOO LN	PO BOX 210	BUFFALO	MN	55313
13.00145.00	JUDSON E ALVORD	100 NORMAN AVE N	PO BOX 94	FOLEY	MN	56329
13.00195.00	JOHN C RIEBEL &	18866 75TH ST SE		BECKER	MN	55308
13.00196.00	CAROL L ENGELHART	165 DEWEY ST	PO BOX 554	FOLEY	MN	56329
13.00196.01	JEFFREY D LOEWEN &	161 DEWEY ST	PO BOX 741	FOLEY	MN	56329
13.00197.00	THOMAS ARKUSZEWSKI	220 NORMAN AVE N	PO BOX 5	FOLEY	MN	56329
13.00198.00	GREGORY M WENNER &	221 2ND AVE	PO BOX 307	FOLEY	MN	56329
13.00199.00	RYAN MARKFORT	230 NORMAN AVE N		FOLEY	MN	56329
13.00200.00	KATHLEEN A STUDER	53 DEER HILLS CIR		NORTH OAKS	MN	55127
13.00201.00	DANIEL J LLOYD	311 3RD AVE	PO BOX 562	FOLEY	MN	56329
13.00202.00	RONALD L SCOTT &	301 3RD AVE	PO BOX 311	FOLEY	MN	56329
13.00203.00	HELEN C BETTENDORF	40830 FENIAN WAY		NORTH BRAN	MN	55056
13.00496.00	KEVIN DIEGER &	820 GRAND ST	PO BOX 6	FOLEY	MN	56329
13.00497.00	KEVIN DIEGER &	820 GRAND ST	PO BOX 6	FOLEY	MN	56329
13.00497.50	STONY CREEK OF BENTON CO LLC	7751 440TH ST	PO BOX 2	RICE	MN	56367
13.00497.51	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00497.52	STONY CREEK OF BENTON CO LLC	7751 440TH ST	PO BOX 2	RICE	MN	56367
13.00497.53	BENTON COUNTY		PO BOX 129	FOLEY	MN	56329
13.00497.55	GUSTAVUS ADOLPHUS EVNG LUTH CH	490 PENN ST	PO BOX 545	FOLEY	MN	56329
13.00352.00	HEATHER J MARTELL	130 BROADWAY AVE S		FOLEY	MN	56329
13.00722.00	ARNOLD WOJCIECHOWSKI &	700 MAIN ST	PO BOX 95	FOLEY	MN	56329
13.00723.00	TOBIAS J LLOYD	640 MAIN ST	PO BOX 111	FOLEY	MN	56329
13.00724.00	ALAN V CROSS &	5944 55TH AVE NE		SAUK RAPIDS	MN	56379
13.00725.00	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00727.00	ANDREW STOCKINGER		PO BOX 57	FOLEY	MN	56329
13.00728.00	ROGER G FROM &	31 6TH AVE	PO BOX 751	FOLEY	MN	56329
13.00729.00	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
13.00731.00	JEROME S MECHAVICH &	520 MAIN ST	PO BOX 474	FOLEY	MN	56329
13.00732.00	STONY CREEK OF BENTON CO LLC	7751 440TH ST	PO BOX 2	RICE	MN	56367
13.00734.00	KRISTIN WINTER &	111 BROADWAY AVE S		FOLEY	MN	56329
13.00736.00	NOEL C LEWANDOWSKI &	C/O A M A X INDUSTRIES	PO BOX 252	FOLEY	MN	56329
13.00737.00	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00738.00	CATHERINE SQUARE ASSOCIATES	32 10TH AVE S	STE 10	HOPKINS	MN	55343
13.00208.00	FRANDSEN BANK & TRUST		PO BOX 367	FOLEY	MN	56329
13.00209.00	FRANDSEN BANK & TRUST		PO BOX 367	FOLEY	MN	56329
13.00211.00	BERNADETTE J STANGLER	301 JOHN ST	PO BOX 834	FOLEY	MN	56329
13.00212.00	DENNIS R JOHNSON	310 3RD AVE	PO BOX 540	FOLEY	MN	56329
13.00213.00	BRUCE V THEISEN &	140 COUNTY RD 120		ST CLOUD	MN	56303
13.00214.00	DANIEL T COULTER		PO BOX 343	FOLEY	MN	56329
13.00215.00	FRANDSEN BANK & TRUST		PO BOX 367	FOLEY	MN	56329
13.00216.00	SHEILA LANDUCCI &	C/O RITA A TEFF	PO BOX 35	FOLEY	MN	56329
13.00217.00	TIM KLEIN &	331 BROADWAY AVE N		FOLEY	MN	56329
13.00218.00	KEVIN STARR &	4405 2ND ST SE		ST CLOUD	MN	56304
13.00220.00	CITY OF FOLEY EDA	251 4TH AVE	PO BOX 709	FOLEY	MN	56329
13.00222.00	DIANNE M MOSFORD	315 MAPLE DR	PO BOX 206	FOLEY	MN	56329
13.00132.00	ROBERT J SCHREIFELS &	140 3RD AVE	PO BOX 386	FOLEY	MN	56329
13.00133.00	PATRICK R MASTEY	2759 CLEARWATER RD		ST CLOUD	MN	56301
13.00134.00	JOHN E KERN		PO BOX 330	SARTELL	MN	56377
13.00135.00	SHELLI J DOTSON		PO BOX 433	FOLEY	MN	56329
13.00136.00	BRUNO ENTERTAINMENT SOL LLC	1210 HWY 23		FOLEY	MN	56329
13.00138.00	CROSS OF BENTON COUNTY	150 4TH AVE	PO BOX 205	FOLEY	MN	56329
13.00139.00	CROSS OF BENTON COUNTY	150 4TH AVE	PO BOX 205	FOLEY	MN	56329
13.00419.00	KYLE MELBERG	601 4TH AVE N		FOLEY	MN	56329
13.00421.00	JEREMY P LEGATT	551 4TH AVE N	PO BOX 486	FOLEY	MN	56329
13.00422.00	DEBORAH ANN LANDWEHR	541 4TH AVE N		FOLEY	MN	56329
13.00423.00	SUSAN J ROBERTS	531 4TH AVE N		FOLEY	MN	56329
13.00424.00	JESSICA A MACY &	521 4TH AVE N		FOLEY	MN	56329
13.00425.00	LEROY SHORE &	511 4TH AVE N	PO BOX 534	FOLEY	MN	56329
13.00426.00	MARY P DONOVAN	501 4TH AVE N	PO BOX 192	FOLEY	MN	56329
13.00435.00	DONALD A OTTO &	441 4TH AVE N		FOLEY	MN	56329
13.00436.00	RUSSELL A JUREK &	431 4TH AVE N	PO BOX 395	FOLEY	MN	56329
13.00437.00	TRAVIS THOMAS HAAF &	411 4TH AVE N		FOLEY	MN	56329
13.00438.00	JASON WATERCOTT &	409 4TH AVE N		FOLEY	MN	56329
13.00439.00	CEDAR POINT PROPERTIES LLC	10898 55TH ST		CLEAR LAKE	MN	55319
13.00440.00	SHEILA M GAPINSKI &		PO BOX 653	FOLEY	MN	56329
13.00222.01	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00223.00	KEVIN STARR &	4405 2ND ST SE		ST CLOUD	MN	56304
13.00225.00	CASEYS RETAIL COMPANY		PO BOX 3001	ANKENY	IA	50021
13.00225.01	BENTON COUNTY		PO BOX 129	FOLEY	MN	56329
13.00225.02	BENTON COUNTY		PO BOX 129	FOLEY	MN	56329
13.00225.03	BENTON COUNTY		PO BOX 129	FOLEY	MN	56329
13.00225.50	BENTON COUNTY		PO BOX 129	FOLEY	MN	56329
13.00226.00	ERICK B ONDARKO &	230 BROADWAY AVE N	PO BOX 117	FOLEY	MN	56329
13.00227.00	ERICK B ONDARKO &	230 BROADWAY AVE N	PO BOX 117	FOLEY	MN	56329
13.00228.00	ERICK B ONDARKO &	230 BROADWAY AVE N	PO BOX 117	FOLEY	MN	56329
13.00229.00	BRUCE D LATTERELL &		PO BOX 128	FOLEY	MN	56329
13.00230.00	FOLEY AFFORDABLE HOUSING LLC	6640 LYNDALE AVE S	STE 100	RICHFIELD	MN	55423
13.00239.00	MARY ANN YOUSO		PO BOX 738	FOLEY	MN	56329
13.00240.00	BARBARA C WYKES	240 BROADWAY AVE N	PO BOX 491	FOLEY	MN	56329
13.00241.00	SHAWN KROLL	32514 COUNTY RD 1		ST CLOUD	MN	56303
13.00242.00	D L S GROUP INC		PO BOX 308	FOLEY	MN	56329
13.00523.00	MILEJCZAK LLC	15808 55TH ST N		FOLEY	MN	56329
13.00523.01	FOLEY MEDICAL BUILDING LLC	471 HWY 23	PO BOX 218	FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
13.00526.00	SMITH PROPERTIES OF FOLEY LLC	821 SHORE ACRES DR	PO BOX 657	BIG LAKE	MN	55309
13.00528.00	KATHLEEN M DEJNO	520 BROADWAY AVE N	PO BOX 143	FOLEY	MN	56329
13.00529.00	BRIAN O'LEARY	6316 LAUREL RD		ST CLOUD	MN	56303
13.00530.00	ROSALIND SIEMERS	540 BROADWAY AVE N	PO BOX 425	FOLEY	MN	56329
13.00531.00	GERALD J KAMPA &	550 BROADWAY AVE	PO BOX 381	FOLEY	MN	56329
13.00532.00	ANNIE J FELIX	17988 233RD AVE NW		BIG LAKE	MN	55309
13.00533.00	ANNIE J FELIX	17988 233RD AVE NW		BIG LAKE	MN	55309
13.00534.00	JOHN T EHERENMAN &	610 BROADWAY AVE N	PO BOX 489	FOLEY	MN	56329
13.00535.00	WM HALVERSTADT &	1777 JULIET AVE		ST PAUL	MN	55105
13.00536.00	WM HALVERSTADT &	1777 JULIET AVE		ST PAUL	MN	55105
13.00537.00	WM HALVERSTADT &	1777 JULIET AVE		ST PAUL	MN	55105
13.00538.00	WM HALVERSTADT &	1777 JULIET AVE		ST PAUL	MN	55105
13.00109.00	PAUL BLASZAK		PO BOX 90	FOLEY	MN	56329
13.00110.00	JENNIFER CHRAST ETAL	131 1ST AVE W		FOLEY	MN	56329
13.00110.01	RICHARD D JOHNSON		PO BOX 685	FOLEY	MN	56329
13.00112.00	WAYNE W SHULTZ &		PO BOX 403	FOLEY	MN	56329
13.00113.00	THOMAS C TSCHUMPER &	60 CARPENTER ST	PO BOX 131	FOLEY	MN	56329
13.00114.00	WAYNE C STAUFFENECKER &		PO BOX 69	FOLEY	MN	56329
13.00115.00	TERRANCE J STANG &	111 1ST AVE W	PO BOX 590	FOLEY	MN	56329
13.00116.00	RITA M SAMSA TRUST &		PO BOX 55	FOLEY	MN	56329
13.00117.00	DAVID W WILTGEN &		PO BOX 507	FOLEY	MN	56329
13.00131.00	M L V HOLDINGS LLC	255 3RD AVE SW		MILACA	MN	56353
13.00833.00	HENRY L GRABUSKI &	420 GRAND ST		FOLEY	MN	56329
13.01105.00	JEANNE L ANDERSON	24 BROADWAY AVE S		FOLEY	MN	56329
13.01106.00	MICHAEL DEBERNARDI &		PO BOX 362	FOLEY	MN	56329
13.01107.00	RUTH E PAULSON REV TR	473 GRAND ST		FOLEY	MN	56329
13.01108.00	STONE BROOK VLG TWNHM ASSOC		PO BOX 7218	ST CLOUD	MN	56302
13.00541.00	ALTON O FOSS &	121 HILL AVE	PO BOX 508	FOLEY	MN	56329
13.00542.00	ADAM FOSS	131 HILL AVE		FOLEY	MN	56329
13.00543.00	BETHANY SILVERNESS	141 HILL AVE	PO BOX 144	FOLEY	MN	56329
13.00544.00	JOYCE POSTERICK ETAL	151 HILL AVE	PO BOX 72	FOLEY	MN	56329
13.00545.00	DAVID L KANTOR &	181 HILL AVE		FOLEY	MN	56329
13.00546.00	DAVID L KANTOR &	181 HILL AVE		FOLEY	MN	56329
13.01109.00	D P FOLEY LLC		PO BOX 1017	CHARLOTTE	NC	28201
13.00547.00	TORREY LEWANDOWSKI &		PO BOX 841	FOLEY	MN	56329
13.00548.00	TORREY LEWANDOWSKI &		PO BOX 841	FOLEY	MN	56329
13.00549.00	DOUGLAS E WILKEN &	120 HILL AVE	PO BOX 733	FOLEY	MN	56329
13.00550.00	MICHAEL A HERBRAND &	130 HILL AVE	PO BOX 543	FOLEY	MN	56329
13.00551.00	JAMES WALLACE &	160 HILL AVE		FOLEY	MN	56329
13.00552.00	TERENCE M ERNST &	166 HILL AVE	PO BOX 175	FOLEY	MN	56329
13.00553.00	RHEAJOYCE R PERKINS	168 HILL AVE	PO BOX 73	FOLEY	MN	56329
13.00554.00	MARY ALICE GOMBOS	170 HILL AVE		FOLEY	MN	56329
13.00451.00	APRIL B IRONI	601 BROADWAY AVE N		FOLEY	MN	56329
13.00452.00	DENNIS STROEING &	610 4TH AVE	PO BOX 201	FOLEY	MN	56329
13.00453.00	JONATHAN D BIGAQUETTE	2764 JADE ST		MORA	MN	55051
13.00454.00	KERRYLYNN A YOUNG	630 4TH AVE N		FOLEY	MN	56329
13.00455.00	BRANDON BRENNY &	640 4TH AVE N		FOLEY	MN	56329
13.00456.00	JARED FOX &	650 4TH AVE N		FOLEY	MN	56329
13.00457.00	ROBERT A DAVID &	660 4TH AVE N		FOLEY	MN	56329
13.00460.00	ELIZABETH K STANG &	551 BROADWAY AVE		FOLEY	MN	56329
13.00461.00	TRADITIONAL ASSETS LLC	13015 85TH ST NE		FOLEY	MN	56329
13.00834.00	JOSEPHINE B SCHREIFELS REV TR		PO BOX 189	NEW ULM	MN	56073
13.00835.00	JEROME DAHLER &	412 GRAND ST		FOLEY	MN	56329
13.00836.00	JUDY CLAIRE GADACZ	408 GRAND ST		FOLEY	MN	56329
13.00837.00	MARY JEAN CHMIELEWSKI	110 4TH AVE S		FOLEY	MN	56329
13.00156.00	FRANDSEN BANK & TRUST		PO BOX 367	FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
13.00157.00	DANIEL A SZCZECZ &	161 MAIN ST		FOLEY	MN	56329
13.00158.00	TOM HENRY &	6633 115TH AVE NE		FOLEY	MN	56329
13.00159.00	TERRY SAUER		PO BOX 539	FOLEY	MN	56329
13.00161.00	ISADORE WALCHESKI &	131 3RD AVE	PO BOX 553	FOLEY	MN	56329
13.00162.00	CRAIG A SIMMONSEN		PO BOX 494	FOLEY	MN	56329
13.00163.00	ROBERT W TORELL		PO BOX 404	FOLEY	MN	56329
13.00164.00	CYNTHIA L NIESS ETAL	9575 SUCKER CREEK RD		RICE	MN	56367
13.00164.10	MITCHELL T DILLMAN &	9098 COUNTY RD 147		KIMBALL	MN	55353
13.00165.00	JOSEPH E KAPROTH &		PO BOX 461	FOLEY	MN	56329
13.00166.00	JOSEPH E KAPROTH &	140 2ND AVE	PO BOX 461	FOLEY	MN	56329
13.00167.00	AMERICAN LEGION POST 298	131 4TH AVE N	PO BOX 91	FOLEY	MN	56329
13.00168.00	DIANNE MOSFORD		PO BOX 206	FOLEY	MN	56329
13.00169.00	DIANNE MOSFORD		PO BOX 206	FOLEY	MN	56329
13.00170.00	DIANNE MOSFORD		PO BOX 206	FOLEY	MN	56329
13.00171.00	THOMAS SWEETER	100 3RD AVE	PO BOX 88	FOLEY	MN	56329
13.00462.00	TROY C SUNDEEN	531 BROADWAY AVE		FOLEY	MN	56329
13.00463.00	JANINE M PHILLIPS	521 BROADWAY AVE		FOLEY	MN	56329
13.00464.00	KIM T LATTERELL &	511 BROADWAY AVE	PO BOX 236	FOLEY	MN	56329
13.00465.00	JASON T SACHS &	500 4TH AVE N		FOLEY	MN	56329
13.00466.00	EVELYN BRENNY	520 4TH AVE N		FOLEY	MN	56329
13.00467.00	MARY JANE VAUGHN		PO BOX 48	FOLEY	MN	56329
13.00468.00	DELROY KAMPA &	540 4TH AVE N	PO BOX 12	FOLEY	MN	56329
13.00469.00	GARREL R SHERK &	550 4TH AVE N		FOLEY	MN	56329
13.00470.00	DUANE J WALTER &	7665 RONNEBY RD NE		FOLEY	MN	56329
13.00471.00	KAREN LEE DIXON	431 BROADWAY AVE N		FOLEY	MN	56329
13.00472.00	ELIZABETH MILAM	421 BROADWAY AVE N		FOLEY	MN	56329
13.00473.00	BYRON SCHUMACHER &	411 BROADWAY AVE N		FOLEY	MN	56329
13.00474.00	KENNETH T WILLIAMS &	401 BROADWAY AVE N	PO BOX 68	FOLEY	MN	56329
13.00475.00	JAMES ALBERT NATHE &	831 GRAND ST		FOLEY	MN	56329
13.00476.00	GENE G RHODA &	410 4TH AVE N		FOLEY	MN	56329
13.00477.00	JUSTIN KOSLOSKE &	420 4TH AVE N		FOLEY	MN	56329
02.00350.01	JAMES D O'NEIL	115 9TH ST NW	APT 115	ONAMIA	MN	56359
13.00243.00	D L S GROUP INC		PO BOX 308	FOLEY	MN	56329
13.00244.00	D L S GROUP INC		PO BOX 308	FOLEY	MN	56329
13.00245.00	STEPHEN A MARKOE		PO BOX 500	FOLEY	MN	56329
13.00247.00	MARY C DOMBROVSKI TRUST	371 WASHINGTON CT		FORT MYERS	FL	33931
13.00250.00	RONALD B ZILLMER &	6705 135TH AVE NE		FOLEY	MN	56329
13.00251.00	LAURA L HJORT		PO BOX 121	MILACA	MN	56353
13.00252.00	MARK C TORELL		PO BOX 427	FOLEY	MN	56329
13.00253.00	BRUCE D LATTERELL &	C/O BENTON COUNTY ABSTRACT	PO BOX 128	FOLEY	MN	56329
13.00255.00	DONALD P JACQUEMART &	3449 92ND AVE NE		FOLEY	MN	56329
13.00257.00	CENTRAL MN ARTS BOARD	114 4TH AVE N	PO BOX 458	FOLEY	MN	56329
13.00258.00	TRAVIS ROACH		PO BOX 391	FOLEY	MN	56329
13.00259.00	JOHN H LACHINSKI		PO BOX 62	FOLEY	MN	56329
13.00260.00	MARY C DOMBROVSKI TRUST	371 WASHINGTON CT		FORT MYERS	FL	33931
13.00262.00	GALL ENTERPRISES LLC	270 4TH AVE N	PO BOX 274	FOLEY	MN	56329
13.00263.00	R K C LAND INC	19127 TYLER ST NW		ELK RIVER	MN	55330
13.00539.00	WM HALVERSTADT &	1777 JULIET AVE		ST PAUL	MN	55105
13.00540.00	WM HALVERSTADT &	1777 JULIET AVE		ST PAUL	MN	55105
02.00389.00	JOAN ELLEN BRAUEN &	6954 105TH AVE NE		FOLEY	MN	56329
02.00391.00	TOMMY RAY STRAIT &	10570 65TH ST NE		FOLEY	MN	56329
02.00398.02	JAMES J ABFALTER &	10179 65TH ST NE		FOLEY	MN	56329
02.00398.03	STEVEN R RUNNELS &	10151 65TH ST NE		FOLEY	MN	56329
02.00401.01	RICHARD W GILLITZER &	9791 65TH ST NE		FOLEY	MN	56329
02.00401.02	BRAD DEYAK &	6936 95TH AVE NE		FOLEY	MN	56329
13.00074.00	HOWARD D SWENDRA &	410 BROADWAY AVE S	PO BOX 452	FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
13.00969.00	FOLEY TOWNHOME LLC	15255 BARLEY RD NW		ROYALTON	MN	56373
13.00970.00	SUSANNE M JANEY		PO BOX 153	FOLEY	MN	56329
02.00412.00	DANIEL E DESMARAI &	6711 95TH AVE NE		FOLEY	MN	56329
02.00413.00	KEVIN R MEHRWERTH &	6120 80TH AVE NE		FOLEY	MN	56329
13.00314.00	MATTHEW P FLIGGE	160 COTTAGE GROVE AVE	PO BOX 472	FOLEY	MN	56329
13.00315.00	ROSALIE N MUSACHIO	3325 WESTCHESTER RD		TOLEDO	OH	43615
13.00316.00	DOUGLAS D DETERMAN &	140 COTTAGE GROVE AVE	PO BOX 46	FOLEY	MN	56329
13.00317.00	CYNTHIA L NIESS ETAL	9575 SUCKER CREEK RD		RICE	MN	56367
13.00318.00	LUCAS A BRINCEFIELD &	920 BISCHOFF RD		TAWAS CITY	MI	48763
13.00319.00	TIMOTHY J KAMPA &	110 COTTAGE GROVE AVE	PO BOX 451	FOLEY	MN	56329
13.00320.00	JOEL TUMMEL &		PO BOX 213	FOLEY	MN	56329
13.00321.00	IRVING L NIELSEN &	7239 13TH AVE S		RICHFIELD	MN	55423
13.00013.13	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00305.00	GARY E LOMBARD &	250 COTTAGE GROVE AVE		FOLEY	MN	56329
13.00306.00	CHARLES D LLOYD	240 COTTAGE GROVE AVE	PO BOX 521	FOLEY	MN	56329
13.00307.00	MARK A PETERS	230 COTTAGE GROVE AVE	PO BOX 223	FOLEY	MN	56329
13.00308.00	RICHARD A JR SUMBS &	220 COTTAGE GROVE AVE	PO BOX 694	FOLEY	MN	56329
13.00309.00	PEGGY L ZULAWSKI &	210 COTTAGE GROVE AVE		FOLEY	MN	56329
13.00310.00	JODI A JACOBSON		PO BOX 67	FOLEY	MN	56329
13.00311.00	PHILIP C SVIHEL &	190 COTTAGE GROVE AVE	PO BOX 754	FOLEY	MN	56329
13.00312.00	TREVOR RUECKERT	170 COTTAGE GROVE AVE	PO BOX 587	FOLEY	MN	56329
13.00027.01	BENTON COUNTY		PO BOX 129	FOLEY	MN	56329
13.00031.00	FOLEY MEDICAL BUILDING LLC	471 HWY 23	PO BOX 218	FOLEY	MN	56329
13.00034.00	LORI LOFRANO &		PO BOX 251	FOLEY	MN	56329
13.00035.02	BENTON COUNTY		PO BOX 129	FOLEY	MN	56329
13.00322.00	ELIZABETH FAWKES	151 COTTAGE GROVE AVE		FOLEY	MN	56329
13.00323.00	DELMER FOUQUETTE TR	141 COTTAGE GROVE AVE	PO BOX 87	FOLEY	MN	56329
13.00324.00	TIMOTHY J CORROW-ROLLER		PO BOX 234	FOLEY	MN	56329
13.00325.00	WAYDE A MAURER	121 COTTAGE GROVE AVE	PO BOX 821	FOLEY	MN	56329
13.00325.01	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00327.00	CHELSEA BESTGEN	580 GRAND ST		FOLEY	MN	56329
13.00328.00	SCOTT D MCCLURE	586 GRAND ST		FOLEY	MN	56329
13.00330.00	THOMAS CROSS &	521 FLYNN ST	PO BOX 164	FOLEY	MN	56329
13.00331.00	THOMAS CROSS &	521 FLYNN ST	PO BOX 164	FOLEY	MN	56329
13.00332.00	THOMAS M CROSS &	521 FLYNN ST	PO BOX 164	FOLEY	MN	56329
13.00332.02	THOMAS M CROSS &	521 FLYNN ST	PO BOX 164	FOLEY	MN	56329
13.00334.00	LARRY L STOFFLET	250 DALE AVE	PO BOX 191	FOLEY	MN	56329
13.00335.00	LARRY L STOFFLET	250 DALE AVE	PO BOX 191	FOLEY	MN	56329
13.00336.00	LARRY L STOFFLET	250 DALE AVE	PO BOX 191	FOLEY	MN	56329
13.00337.00	BARRY R VIZENOR	220 DALE AVE		FOLEY	MN	56329
13.00710.00	MARLA DIEDERICH &	201 HILL AVE	PO BOX 432	FOLEY	MN	56329
13.00711.00	WAYNE KOEHL TR &		PO BOX 353	NEVIS	MN	56467
13.00712.00	CRAIG H LOCH &	221 HILL AVE		FOLEY	MN	56329
13.01010.00	DENNIS A DIERKES	54 BROADWAY AVE S		FOLEY	MN	56329
13.01011.00	TODD DRIVER &		PO BOX 161	FOLEY	MN	56329
13.01012.00	ROBERT R LANGE REV TR &	463 GRAND ST		FOLEY	MN	56329
13.01013.00	ANNETTE BRENNY	453 GRAND ST		FOLEY	MN	56329
13.01014.00	LYON CONTRACTING & DEVELOP INC	3601 18TH ST S	STE 103	ST CLOUD	MN	56301
13.00348.10	KENNETH L MONROE &	431 BROADWAY AVE S		FOLEY	MN	56329
13.00349.00	PAUL BEMBOOM	120 BROADWAY AVE S		FOLEY	MN	56329
13.00350.00	PAUL BEMBOOM	120 BROADWAY AVE S		FOLEY	MN	56329
13.00073.00	ANGEL SKUBIC	400 BROADWAY AVE S		FOLEY	MN	56329
13.00353.00	DONNA M KAISER	140 BROADWAY AVE S		FOLEY	MN	56329
13.00355.00	BRUCE FOUQUETTE	160 BROADWAY AVE S	PO BOX 253	FOLEY	MN	56329
13.00356.00	NANCY J LEIKVOLL	160 BROADWAY AVE S	PO BOX 253	FOLEY	MN	56329
13.00357.00	BRUCE A HOLMVIG &	170 BROADWAY AVE S		FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
13.00358.00	JEFFREY M HOFFMAN	211 DALE AVE	PO BOX 703	FOLEY	MN	56329
13.00359.00	LINDA L WOJCIECHOWSKI &		PO BOX 43	FOLEY	MN	56329
13.00360.00	GAIL A OLSON		PO BOX 631	FOLEY	MN	56329
13.00361.00	GAIL A OLSON		PO BOX 631	FOLEY	MN	56329
13.00362.00	ROBERT P TWEDT	476 GRAND ST		FOLEY	MN	56329
13.00363.00	ROBERT P TWEDT	476 GRAND ST		FOLEY	MN	56329
13.00364.00	ROBERT P TWEDT	476 GRAND ST		FOLEY	MN	56329
13.00365.00	KRISTIN WINTER &	111 BROADWAY AVE S		FOLEY	MN	56329
13.00366.00	KIRK A FRASIER	121 BROADWAY AVE S	PO BOX 525	FOLEY	MN	56329
13.00367.00	JEFFREY ROGER RAU	5281 185TH AVE NE		FOLEY	MN	56329
13.00368.00	JOHN G POSHEK	135 BROADWAY AVE S		FOLEY	MN	56329
13.00739.00	FOLEY FUEL & LUMBER LLC		PO BOX 157	FOLEY	MN	56329
13.00739.01	FOLEY FUEL & LUMBER LLC		PO BOX 157	FOLEY	MN	56329
13.00740.00	BIG NORWAY LLC	1 RIVERCREST DR # 101		ST CLOUD	MN	56303
13.00741.00	BIG NORWAY LLC	1 RIVERCREST DR # 101		ST CLOUD	MN	56303
13.00742.00	FALCONSHIRE PARTNERSHIP		PO BOX 7792	ST CLOUD	MN	56302
13.00743.00	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
02.00482.00	GREGORY J BLANK	9901 HWY 23 NE		FOLEY	MN	56329
02.00502.00	TOMMY RAY STRAIT &	10570 65TH ST NE		FOLEY	MN	56329
13.00057.00	FOREMOST HEALTHCARE PROP INC	253 PINE ST		FOLEY	MN	56329
02.00475.00	GREGORY J BLANK	9901 HWY 23 NE		FOLEY	MN	56329
02.00477.00	HEATHER N EICH	9872 65TH ST NE		FOLEY	MN	56329
02.00477.01	JAMES A JACKELS	436 13TH AVE S		SAUK RAPIDS	MN	56379
02.00479.00	GREGORY J BLANK	9901 HWY 23 NE		FOLEY	MN	56329
13.00081.00	BRIAN E THOMPSON &	131 NORMAN AVE N	PO BOX 454	FOLEY	MN	56329
13.00082.00	SHEILA A GARCEAU	30 CARPENTER ST		FOLEY	MN	56329
13.00083.00	AARON R KJELDERGAARD &	121 NORMAN AVE		FOLEY	MN	56329
13.00084.00	ROGER V SOBANIA &	101 NORMAN AVE		FOLEY	MN	56329
13.00085.00	JONATHAN BRENNY		PO BOX 441	FOLEY	MN	56329
13.00086.00	THEODORE GARCEAU &	41 GLEN ST		FOLEY	MN	56329
13.00087.00	WAYNE W SHULTZ &		PO BOX 403	FOLEY	MN	56329
13.00088.00	SHEILA A GARCEAU	30 CARPENTER ST		FOLEY	MN	56329
13.00089.00	C F R LLC		PO BOX 278	FOLEY	MN	56329
13.00090.00	SCOTT C SHERK &	40 CARPENTER ST		FOLEY	MN	56329
13.00091.00	FRANK LINDNER	211 NORMAN AVE	PO BOX 603	FOLEY	MN	56329
13.00092.00	JOHN C VIZENOR &	31 CARPENTER ST		FOLEY	MN	56329
13.00093.00	CAROL J DICKINSON	231 NORMAN AVE N		FOLEY	MN	56329
13.00369.00	HENRY R OLSON &	141 BROADWAY AVE S		FOLEY	MN	56329
13.00370.00	HENRY R OLSON &	141 BROADWAY AVE S		FOLEY	MN	56329
13.00371.00	BEVERLY K STOPPELMAN	151 BROADWAY AVE S		FOLEY	MN	56329
13.00374.00	MAX JACOBSON &	140 4TH AVE S	PO BOX 1	FOLEY	MN	56329
13.00375.00	THOMAS LUND	120 4TH AVE S		FOLEY	MN	56329
13.00376.00	JOHN RIEBEL		PO BOX 442	BIG LAKE	MN	55309
13.00377.00	JOE K LANGENBAU &	600 DEWEY ST		FOLEY	MN	56329
13.00377.01	DONALD R BRUNN &	610 DEWEY ST		FOLEY	MN	56329
13.00378.00	WILLIAM RAYMOND SHERK	11391 375TH ST		NORTH BRAN	MN	55056
13.00379.00	JON C CROSS &	640 DEWEY ST		FOLEY	MN	56329
13.00380.00	GARY J SWANSON &	111 7TH AVE	PO BOX 442	FOLEY	MN	56329
13.00381.00	NICHOLAS F KRAGT	101 7TH AVE		FOLEY	MN	56329
13.00382.00	KYLE BURTON HENRY	100 6TH AVE		FOLEY	MN	56329
13.00383.00	DANIEL M ZIWICKI &	110 6TH AVE	PO BOX 523	FOLEY	MN	56329
13.00384.00	KEVIN T KUKLOK &	120 6TH AVE		FOLEY	MN	56329
13.00385.00	ANDREW CHRISTOPHERSON	130 6TH AVE		FOLEY	MN	56329
02.00485.01	GREGORY J BLANK	9901 HWY 23 NE		FOLEY	MN	56329
13.00094.00	TIMOTHY J LLOYD &	221 NORMAN AVE	PO BOX 261	FOLEY	MN	56329
13.00095.00	DARYN WAYNE KULA &	241 NORMAN AVE N		FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
13.00096.00	MARIAN HOLEWA	30 MONROE ST	PO BOX 8	FOLEY	MN	56329
13.00097.00	KRISTI DAHL	40 MONROE ST	PO BOX 123	FOLEY	MN	56329
13.00097.01	JOHN E THOMPSON TR &		PO BOX 745	FOLEY	MN	56329
13.00098.00	DEAN S SCHAFFER &	37 CARPENTER ST		FOLEY	MN	56329
13.00099.00	DEAN SCHAFFER &	37 CARPENTER ST		FOLEY	MN	56329
13.00100.00	BEVERLY A DILLENBURG	49 CARPENTER ST		FOLEY	MN	56329
13.00101.00	JEFFREY A GONDECK	55 CARPENTER ST		FOLEY	MN	56329
13.00102.00	LELAND SHORE	61 CARPENTER ST	PO BOX 726	FOLEY	MN	56329
13.00103.00	JAMES L ANDERSON	903 43RD ST SW		FARGO	ND	58103
13.00104.00	STEPHEN E BARTELL &	73 CARPENTER ST	PO BOX 671	FOLEY	MN	56329
13.00105.00	JOYCE M ROSS	130 1ST AVE W	PO BOX 456	FOLEY	MN	56329
13.00106.00	THOMAS C TSCHUMPER &	60 CARPENTER ST	PO BOX 131	FOLEY	MN	56329
13.00107.00	NATHAN J KOOB &	120 1ST AVE W		FOLEY	MN	56329
13.00108.00	TAMMY M HEINEN SANCHEZ &	91 GLEN ST		FOLEY	MN	56329
13.00776.00	WILLIAM M BRONDER		PO BOX 203	FOLEY	MN	56329
02.00347.00	THERESA M FLEECE	920 GRAND ST	PO BOX 273	FOLEY	MN	56329
02.00542.00	EDWARD HEINTZE ETAL		PO BOX 27	FOLEY	MN	56329
13.00077.01	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00077.00	FEDERATED COOPERATIVES	502 2ND ST S		PRINCETON	MN	55371
02.00541.00	MARIBETH A BEDTKE ETAL	661 NORMAN AVE N	PO BOX 128	FOLEY	MN	56329
13.00020.00	CORRY D RUECKERT &	211 HWY 23	PO BOX 45	FOLEY	MN	56329
13.00022.00	KEITH M YOUSO	411 3RD AVE	PO BOX 833	FOLEY	MN	56329
13.00023.00	JEFF PETROUSKI	95 STONEY BROOK RD		FOLEY	MN	56329
13.00025.00	RONNY STUDENSKI &	441 3RD AVE	PO BOX 332	FOLEY	MN	56329
13.00039.00	THOMAS J YOUNG &	651 NORMAN AVE	PO BOX 217	FOLEY	MN	56329
13.00038.00	BRUCE D LATTELL &		PO BOX 128	FOLEY	MN	56329
13.00030.02	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00014.00	MARY ANN GROW		PO BOX 394	FOLEY	MN	56329
13.00111.00	GERALD PETER LUTGEN	201 1ST AVE W	PO BOX 481	FOLEY	MN	56329
13.00041.60	MARK COBORN &	1445 HWY 23 E	PO BOX 6146	ST CLOUD	MN	56302
13.00032.00	GERALD PETER LUTGEN	201 1ST AVE W	PO BOX 481	FOLEY	MN	56329
13.00033.00	ARNOLD A SCHOMMER &	253 OAK DR	PO BOX 61	FOLEY	MN	56329
13.00041.40	K & K TIRE & AUTO CTR HLDG LLC	187 HWY 23	PO BOX 687	FOLEY	MN	56329
13.00019.00	TIMOTHY D FEDDEMA		PO BOX 1338	ST CLOUD	MN	56302
13.00210.00	BETHANY ORTON		PO BOX 124	FOLEY	MN	56329
13.00210.01	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00373.00	MICAELA J HERBST	131 4TH AVE S		FOLEY	MN	56329
13.00372.00	VIRGINIA VANDERWEYST ETAL	121 4TH AVE S		FOLEY	MN	56329
13.00415.00	DENNIS BEUTZ &	241 OAK DR		FOLEY	MN	56329
13.00459.00	LARRY P JOHNSON		PO BOX 429	FOLEY	MN	56329
13.00293.51	I S D 51	840 NORMAN AVE N	PO BOX 297	FOLEY	MN	56329
02.00360.00	MAXINE I OLSON	671 NORMAN AVE N		FOLEY	MN	56329
13.00037.00	MAXINE I OLSON	671 NORMAN AVE N		FOLEY	MN	56329
13.00338.00	C F R LLC		PO BOX 278	FOLEY	MN	56329
13.00339.00	LISA A KOENIG &		PO BOX 75	FOLEY	MN	56329
13.00051.02	FOLEY HEALTH CARE INC	253 PINE ST		FOLEY	MN	56329
13.00062.00	WILLMAR POULTRY CO INC		PO BOX 753	WILLMAR	MN	56201
13.00063.50	CHRIS A HARREN &	179 BROADWAY AVE S		FOLEY	MN	56329
13.00079.00	CHRIS A HARREN &	179 BROADWAY AVE S		FOLEY	MN	56329
13.00080.00	MELISSA J BULTHUIS &	171 BROADWAY AVE S	PO BOX 102	FOLEY	MN	56329
13.00075.00	ADAM ORTON &	181 4TH AVE S		FOLEY	MN	56329
13.00041.82	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00041.83	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.01114.00	STATE OF MINNESOTA HWY 23 2010	7694 INDUSTRIAL PARK RD		BAXTER	MN	56425
02.00375.00	MAXINE I OLSON	671 NORMAN AVE N		FOLEY	MN	56329
13.00021.00	KATHLEEN M DENFELD		PO BOX 473	FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
13.00024.00	JASON E WAHL &		PO BOX 323	FOLEY	MN	56329
13.00026.01	GUSTAVUS ADOLPHUS EVNG LUTH CH	490 PENN ST	PO BOX 545	FOLEY	MN	56329
13.00027.00	CORY L ROSE	510 BROADWAY AVE N		FOLEY	MN	56329
13.00048.10	AXIS COMPANIES LLC		PO BOX 232	FOLEY	MN	56329
13.00048.00	AXIS COMPANIES LLC		PO BOX 232	FOLEY	MN	56329
13.00121.00	JENNIFER HESSE &	141 3RD AVE	PO BOX 2	FOLEY	MN	56329
13.00122.00	RAILSIDE LLC		PO BOX 176	PRINCETON	MN	55371
13.00412.00	ALAN V CROSS &	5944 55TH AVE NE		SAUK RAPIDS	MN	56379
13.00413.00	TOBIAS J LLOYD	640 MAIN ST	PO BOX 111	FOLEY	MN	56329
13.00414.00	ARNOLD WOJCIECHOWSKI &	700 MAIN ST	PO BOX 95	FOLEY	MN	56329
13.00416.00	RODNEY R ZEROOTH &	641 4TH AVE N		FOLEY	MN	56329
13.00417.00	ROBERTA J SOBANIA &	631 4TH AVE N		FOLEY	MN	56329
13.00418.00	LINDA M LEMON	621 4TH AVE N		FOLEY	MN	56329
13.00123.00	DEBRA CUNNINGHAM	161 3RD AVE	PO BOX 174	FOLEY	MN	56329
13.00124.00	BENJAMIN C ZAWACKI &	200 DEWEY ST	PO BOX 856	FOLEY	MN	56329
13.00125.00	JOSEPH E KAPROTH &	140 2ND AVE	PO BOX 461	FOLEY	MN	56329
13.00126.00	AMERICAN LEGION POST 298	131 4TH AVE N	PO BOX 91	FOLEY	MN	56329
13.00127.00	FRANDSEN BANK & TRUST		PO BOX 367	FOLEY	MN	56329
13.00128.00	FRANDSEN BANK & TRUST		PO BOX 367	FOLEY	MN	56329
13.00129.00	CUSTOMER ELATION INC	9065 LYNDAL AVE S		BLOOMINGTON	MN	55420
13.00130.00	PATRICK M DOMBROVSKI &	150 8TH AVE	PO BOX 617	FOLEY	MN	56329
13.00040.00	MARK J BRENNY &		PO BOX 547	FOLEY	MN	56329
13.00047.00	ROBERT S BRENNY &	C/O BRENNY OIL CO	PO BOX 575	FOLEY	MN	56329
13.00340.00	C F R LLC		PO BOX 278	FOLEY	MN	56329
13.00341.00	PHH MORTGAGE CORPORATION	2001 BISHOPS GATE BLVD		MOUNT LAUREL	NJ	08054
13.00342.00	LISA A KOENIG &		PO BOX 75	FOLEY	MN	56329
13.00343.00	DUANE P GORECKI &	231 COTTAGE GROVE AVE	PO BOX 512	FOLEY	MN	56329
13.00344.00	MATTHEW S BORKENHAGEN &	251 COTTAGE GROVE AVE		FOLEY	MN	56329
13.00344.01	DUANE D GORECKI &	231 COTTAGE GROVE AVE	PO BOX 512	FOLEY	MN	56329
13.00345.00	ANNA MAY D BRODA	100 BROADWAY AVE S		FOLEY	MN	56329
13.00346.00	ROBERT P TWEDT	476 GRAND ST		FOLEY	MN	56329
13.00347.00	JOAN L MARTINS ETAL	470 GRAND ST		FOLEY	MN	56329
13.00348.00	STERLING L DUCKETT &	510 GRAND ST		FOLEY	MN	56329
13.00428.10	ROSE MARIE MILLESS	12713 MAIN ST		ROGERS	MN	55374
13.00420.00	ROSE MARIE MILLESS	12713 MAIN ST		ROGERS	MN	55374
13.00077.02	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00077.03	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00076.01	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00026.00	CONRAD TOWNE	703 NORMAN AVE	PO BOX 753	FOLEY	MN	56329
13.00018.00	TOWNE ESTATE FARM LLC		PO BOX 753	FOLEY	MN	56329
13.00015.14	NEW LIFE CHURCH OF FOLEY	358 MAPLE DR		FOLEY	MN	56329
13.00015.12	TOWNE ESTATE FARM LLC		PO BOX 753	FOLEY	MN	56329
13.00036.00	THOMAS J LATTERELL REV TR &		PO BOX 236	FOLEY	MN	56329
13.00015.13	TOWNE ESTATE FARM LLC		PO BOX 753	FOLEY	MN	56329
13.00052.00	FOLEY SQ ASSOC LTD PTSHP	32 10TH AVE S	STE 109	HOPKINS	MN	55343
13.00041.80	MICAELA J HERBST	131 4TH AVE S		FOLEY	MN	56329
13.01116.00	STEVEN J CHENEY &	14025 23RD AVE N		PLYMOUTH	MN	55447
13.01117.00	FOLEY THREE LLC		PO BOX 224	FOLEY	MN	56329
13.01118.00	FOLEY THREE LLC		PO BOX 224	FOLEY	MN	56329
13.01119.00	VAUGHN A CORNELIUS &	3353 21ST AVE S		ST CLOUD	MN	56301
02.00483.02	LEROY HERBST &	4912 105TH AVE NE		FOLEY	MN	56329
02.00474.00	FOLEY THREE LLC		PO BOX 224	FOLEY	MN	56329
02.00474.01	GREGORY J BLANK	9901 HWY 23 NE		FOLEY	MN	56329
02.00400.00	GREGORY J BLANK	9901 HWY 23 NE		FOLEY	MN	56329
02.00485.00	GREGORY J BLANK	9901 HWY 23 NE		FOLEY	MN	56329
02.00476.00	GREGORY J BLANK	9901 HWY 23 NE		FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
02.00487.00	GREGORY J BLANK	9901 HWY 23 NE		FOLEY	MN	56329
02.00503.01	WILLIAM G STEVENS &	10849 HWY 23 NE		FOLEY	MN	56329
02.00350.02	JAMES D O'NEIL	115 9TH ST NW	APT 115	ONAMIA	MN	56359
02.00348.00	BRIAN K WALDOCH	12675 65TH ST NE		FOLEY	MN	56329
13.01110.00	C L T PARTNERS LLP	13854 1ST ST	STE 10	BECKER	MN	55308
13.00709.00	MICHAEL R HENNEN	230 HILL AVE		FOLEY	MN	56329
13.00708.00	STEVEN W O'BRIEN &	220 HILL AVE	PO BOX 649	FOLEY	MN	56329
13.00713.00	KEVIN M SWENSON &	231 HILL AVE	PO BOX 755	FOLEY	MN	56329
13.00706.00	WAYNE F SIELING &	200 HILL AVE		FOLEY	MN	56329
13.00707.00	JOE G LUNN &	210 HILL AVE	PO BOX 537	FOLEY	MN	56329
02.00349.00	KENNETH L MONROE &	431 BROADWAY AVE S		FOLEY	MN	56329
13.00011.00	KENNETH L MONROE &	431 BROADWAY AVE S		FOLEY	MN	56329
13.00040.15	ROBERT F FLEEGE &		PO BOX 273	FOLEY	MN	56329
13.00040.30	KARL G STRAIT &	6792 HWY 25 NE	PO BOX 215	FOLEY	MN	56329
13.00040.05	FRANDSEN BANK & TRUST		PO BOX 367	FOLEY	MN	56329
02.00359.00	THOMAS J LATTERELL REV TR &		PO BOX 236	FOLEY	MN	56329
02.00356.00	MAXINE I OLSON	671 NORMAN AVE N		FOLEY	MN	56329
02.00355.00	BRUCE D LATTERELL &		PO BOX 128	FOLEY	MN	56329
02.00357.00	THOMAS J YOUNG &	651 NORMAN AVE	PO BOX 217	FOLEY	MN	56329
13.00040.10	MAXINE I OLSON	671 NORMAN AVE N		FOLEY	MN	56329
13.00040.16	STATE OF MINNESOTA	3725 12TH ST N		ST CLOUD	MN	56303
13.00078.00	ARLENE KOSLOSKI	171 4TH AVE S	PO BOX 352	FOLEY	MN	56329
13.00061.00	LAWRENCE R NADEAU &		PO BOX 249	FOLEY	MN	56329
13.00040.20	NORTHERN STATES POWER CO	414 NICOLLET MALL		MINNEAPOLIS	MN	55401
13.00040.25	DANIEL M HANES &	45 HIGHWAY 23 W		FOLEY	MN	56329
13.00040.20	NORTHERN STATES POWER CO	414 NICOLLET MALL		MINNEAPOLIS	MN	55401
02.00346.00	LARRY E LAVIGNE	13043 65TH ST NE		FOLEY	MN	56329
02.00345.02	ST JOHNS CATHOLIC CHURCH	215 7TH AVE	PO BOX 337	FOLEY	MN	56329
02.00358.00	SHARON L BRENNY TRUST		PO BOX 575	FOLEY	MN	56329
13.00041.00	SHARON L BRENNY TRUST		PO BOX 575	FOLEY	MN	56329
13.00076.08	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
13.00015.00	RICHARD A THORSTEN &	809 PENN ST	PO BOX 518	FOLEY	MN	56329
13.00005.00	WILLIAM D HALVERSTADT &	219 MAIN ST SE	STE 500	MINNEAPOLIS	MN	55414
13.00026.02	TOWNE ESTATE FARM LLC		PO BOX 753	FOLEY	MN	56329
13.00005.00	WILLIAM D HALVERSTADT &	219 MAIN ST SE	STE 500	MINNEAPOLIS	MN	55414
13.00871.00	I S D 51	840 NORMAN AVE N	PO BOX 297	FOLEY	MN	56329
13.00030.01	BENTON COUNTY		PO BOX 129	FOLEY	MN	56329
13.01122.00	DOROTHY J GORECKI	510 4TH AVE NW		MILACA	MN	56353
13.01123.00	BENEDICT F GORECKI &	510 4TH AVE NW		MILACA	MN	56353
13.00030.00	MISKE PROPERTIES LLC	8803 COVE POINTE RD		EDEN PRAIRIE	MN	55347
13.00348.16	TIMOTHY J KAMPA &	110 COTTAGE GROVE AVE	PO BOX 451	FOLEY	MN	56329
13.00012.01	WM HALVERSTADT &	1777 JULIET AVE		ST PAUL	MN	55105
13.00246.00	PATRICK M DOMBROVSKI ETAL	425 DEWEY ST	PO BOX 308	FOLEY	MN	56329
13.00043.00	ROBERT S BRENNY &	C/O BRENNY OIL CO	PO BOX 575	FOLEY	MN	56329
13.00045.00	BRENNY OIL COMPANY INC	ROBERT BRENNY	PO BOX 575	FOLEY	MN	56329
13.00049.00	ROBERT S BRENNY &	C/O BRENNY OIL CO	PO BOX 575	FOLEY	MN	56329
13.00046.00	ROBERT S BRENNY &	C/O BRENNY OIL CO	PO BOX 575	FOLEY	MN	56329
13.00044.00	ROBERT S BRENNY &	C/O BRENNY OIL CO	PO BOX 575	FOLEY	MN	56329
02.00401.00	CECIL A WADE	9901 65TH ST NE		FOLEY	MN	56329
02.00512.13	STATE OF MINNESOTA HWY 23 2010	7694 INDUSTRIAL PARK RD		BAXTER	MN	56425
02.00483.01	LEROY HERBST &	4912 105TH AVE NE		FOLEY	MN	56329
02.00501.00	HOWARD V VAILLANCOURT	13308 309TH AVE		PRINCETON	MN	55371
02.00495.02	STATE OF MINNESOTA HWY 23 2010	7694 INDUSTRIAL PARK RD		BAXTER	MN	56425
02.00485.04	STATE OF MINNESOTA HWY 23 2010	7694 INDUSTRIAL PARK RD		BAXTER	MN	56425
02.00631.00	CITY OF FOLEY	251 4TH AVE N	PO BOX 709	FOLEY	MN	56329
02.00354.00	KARL G STRAIT ETAL	6792 HWY 25 NE	PO BOX 215	FOLEY	MN	56329

PARCELS LOCATED WITHIN THE CITY OF FOLEY DWSMA

PARCEL NUM	PROPERTY TAXPAYER	PROPERTY ADDRESS	MAIL ADDRESS	CITY	ST	ZIP
02.00483.00	MARIE GALLAGHER &	10360 HWY 23 NE		FOLEY	MN	56329
13.00063.25	EDWARD H HEINTZE &	191 4TH AVE S	PO BOX 27	FOLEY	MN	56329
13.00055.00	LAWRENCE R NADEAU &		PO BOX 249	FOLEY	MN	56329
13.00151.00	MARCUS D CLAXTON		PO BOX 133	FOLEY	MN	56329
13.00192.00	SARAH ARENKIEL		PO BOX 706	FOLEY	MN	56329
13.00427.00	MARILEE P MUSSELMAN	20403 CAROL LN		ROGERS	MN	55374
13.00428.00	SHANE R KEATING &		PO BOX 284	FOLEY	MN	56329
13.00118.00	MARCUS D CLAXTON		PO BOX 133	FOLEY	MN	56329
13.00966.00	THOMAS W MONROE &		PO BOX 556	FOLEY	MN	56329
13.00967.00	SANDRA OUELLETTE	554 NORMAN AVE N	PO BOX 715	FOLEY	MN	56329
13.00968.00	MARLA RENEE FOSS ETAL		PO BOX 204	FOLEY	MN	56329
13.00119.00	LUANNE C CAYWOOD	141 2ND AVE	PO BOX 595	FOLEY	MN	56329
13.00120.00	BERGSTROM FAMILY TRUST	14077 HARDY LAKE RD	C/O BRUCE A BERGSTROM	PILLAGER	MN	56473
02.00484.01	STATE OF MINNESOTA HWY 23 2010	7694 INDUSTRIAL PARK RD		BAXTER	MN	56425
13.01121.00	FOLEY THREE LLC		PO BOX 224	FOLEY	MN	56329
13.01115.01	STATE OF MINNESOTA HWY 23 2010	7694 INDUSTRIAL PARK RD		BAXTER	MN	56425
13.01120.00	FOLEY THREE LLC		PO BOX 224	FOLEY	MN	56329
02.00503.00	WILLIAM G STEVENS &	10849 HWY 23 NE		FOLEY	MN	56329
02.00495.00	WILLIAM G STEVENS &	10849 HWY 23 NE		FOLEY	MN	56329
02.00483.03	STATE OF MINNESOTA HWY 23 2010	7694 INDUSTRIAL PARK RD		BAXTER	MN	56425
02.00393.00	JAMES DONOVAN	10061 65TH ST NE		FOLEY	MN	56329
02.00398.00	JAMES DONOVAN	10061 65TH ST NE		FOLEY	MN	56329
02.00394.00	JOAN ELLEN BRAUEN &	6954 105TH AVE NE		FOLEY	MN	56329
02.00399.00	JOAN ELLEN BRAUEN &	6954 105TH AVE NE		FOLEY	MN	56329

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1050001	COMMUNITY
NAME	Foley	
ADDRESS	Foley Water Superintendent, 251 Fourth Avenue North, P.O. Box 709, Foley, MN 563290709	

FACILITY (WELL) INFORMATION

NAME	Well #3	IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
FACILITY ID	S03	<input type="checkbox"/> YES (Please attach a copy)
UNIQUE WELL NO.	240768	<input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED
COUNTY	Benton	

PWS ID / FACILITY ID	1050001 S03	UNIQUE WELL NO.	240768
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PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)			LOCATION	
		Minimum Distances		Sensitive Well ¹	Within 200 Ft. Y / N / U	Dist. from Well
		Community	Non- community			

Agricultural Related

*AC1	Agricultural chemical buried piping	50	50		N	
*AC2	Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight	50	50		N	
ACP	Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards	150	150		N	
ACS	Agricultural chemical storage or equipment filling or cleaning area with safeguards	100	100		N	
ACR	Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed	50	50		N	
ADW	Agricultural drainage well ² (Class V well - illegal ³)	50	50		N	
AAT	Anhydrous ammonia tank (stationary tank)	50	50		N	
AB1	Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard)	50	20	100/40	N	
AB2	Animal building or poultry building, including a horse riding area, more than 1.0 animal unit	50	50	100	N	
ABS	Animal burial area, more than 1.0 animal unit	50	50		N	
FWP	Animal feeding or watering area within a pasture, more than 1.0 animal unit	50	50	100	N	
AF1	Animal feedlot, unroofed, 300 or more animal units (stockyard)	100	100	200	N	
AF2	Animal feedlot, more than 1.0, but less than 300 animal units (stockyard)	50	50	100	N	
AMA	Animal manure application	use discretion	use discretion		N	
REN	Animal rendering plant	50	50		N	
MS1	Manure (liquid) storage basin or lagoon, unpermitted or noncertified	300	300	600	N	
MS2	Manure (liquid) storage basin or lagoon, approved earthen liner	150	150	300	N	
MS3	Manure (liquid) storage basin or lagoon, approved concrete or composite liner	100	100	200	N	
MS4	Manure (solid) storage area, not covered with a roof	100	100	200	N	
OSC	Open storage for crops	use discretion	use discretion		N	

SSTS Related

AA1	Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day	300	300	600	N	
AA2	Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less	150	150	300	N	
AA3	Absorption area of a soil dispersal system, average flow 10,000 gal./day or less	50	50	100	N	
AA4	Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well) ²	50/300/150 ⁴	50/300/150 ⁴	100/600/300 ⁴	N	
CSP	Cesspool	75	75	150	N	
AGG	Dry well, leaching pit, seepage pit	75	75	150	N	
*FD1	Floor drain, grate, or trough connected to a buried sewer	50	50		N	
*FD2	Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences	50	20		N	
*GW1	Gray-water dispersal area	50	50	100	N	
LC1	Large capacity cesspools (Class V well - illegal) ²	75	75	150	N	
MVW	Motor vehicle waste disposal (Class V well - illegal) ²	illegal	illegal		N	

PWS ID / FACILITY ID	1050001 S03	UNIQUE WELL NO.	240768
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PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well ¹	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	96	Y
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well ² (Class V well - illegal ³)	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well) ²	illegal ³	illegal ³		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID

1050001 S03

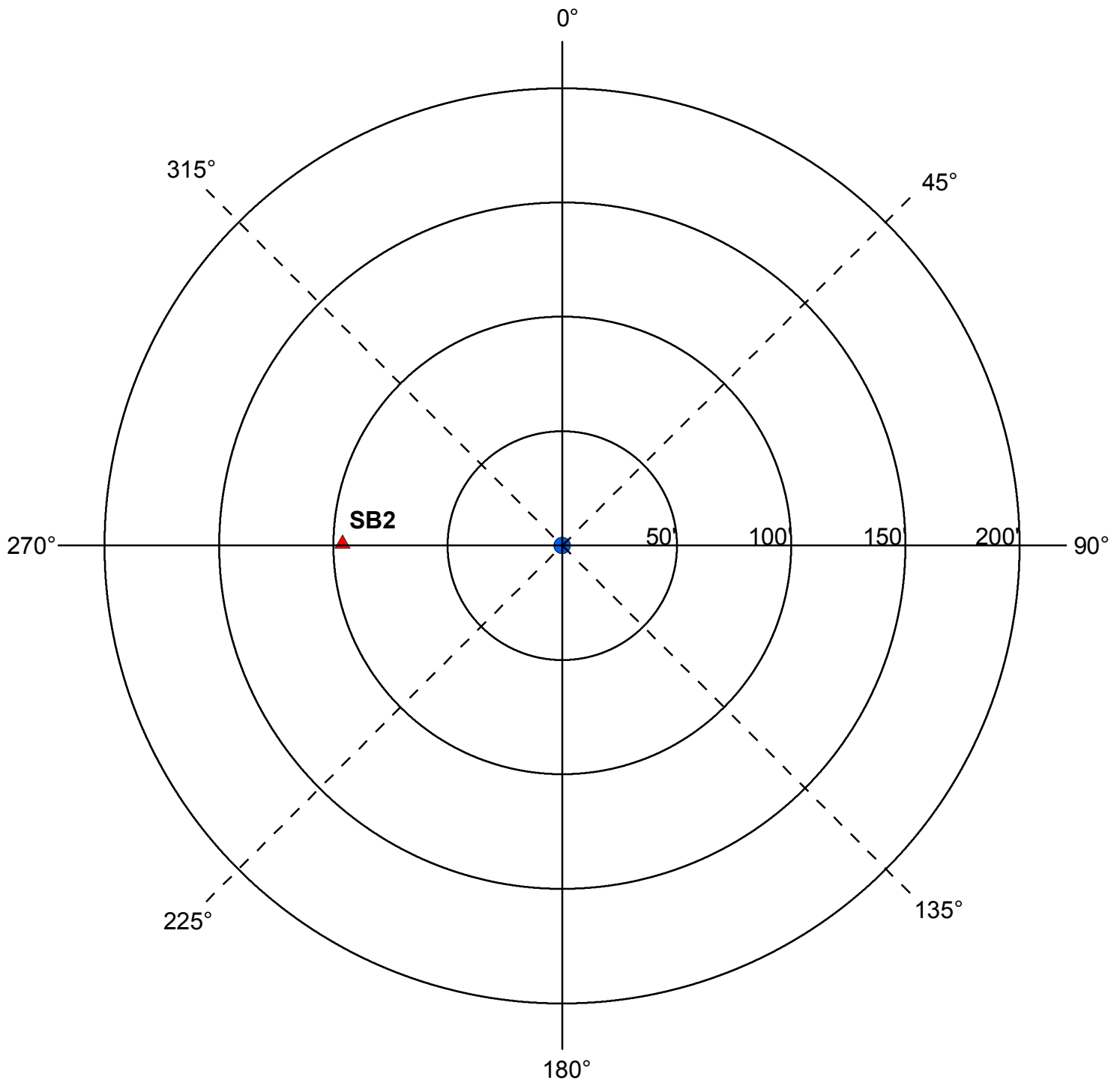
UNIQUE WELL NO.

240768

SETBACK DISTANCES

All potential contaminant sources must be noted on sketch.

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



Y	N	N/A

Were the isolation distances maintained for the new sources of contamination?

Is the system monitoring existing nonconforming sources of contamination?

Reminder Question: Were the wellhead protection measure(s) implemented?

INSPECTOR

Minerich, George

DATE

11 - 22 - 2014

PWS ID / FACILITY ID	1050001 S03	UNIQUE WELL NO.	240768
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RECOMMENDED WELLHEAD PROTECTION (WHP) MEASURES	WHP MEASURE IMPLEMENTED? Y or N	DATE VERIFIED

COMMENTS

9/7/2003 - Location for PCSI Type SBM (bearing = 0, distance = 150 , inventory date: 10/5/1998) could not be determined.

For further information, please contact:

Minnesota Department of Health
 Drinking Water Protection Section
 Source Water Protection Unit
 P.O. Box 64975
 St. Paul, Minnesota 55164-0975

Section Receptionist: 651-201-4700
 Division TDD: 651-201-5797 or MN Relay Service @ 1-800-627-3529 and ask for 651-201-5000

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1050001	COMMUNITY
NAME	Foley	
ADDRESS	Foley Water Superintendent, 251 Fourth Avenue North, P.O. Box 709, Foley, MN 563290709	

FACILITY (WELL) INFORMATION

NAME	Well #4	IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
FACILITY ID	S04	<input type="checkbox"/> YES (Please attach a copy)
UNIQUE WELL NO.	721698	<input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED
COUNTY	Benton	

PWS ID / FACILITY ID	1050001 S04	UNIQUE WELL NO.	721698
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PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)			LOCATION	
		Minimum Distances		Sensitive Well¹	Within 200 Ft. Y / N / U	Dist. from Well
		Community	Non- community			

Agricultural Related

*AC1	Agricultural chemical buried piping	50	50		N	
*AC2	Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight	50	50		N	
ACP	Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards	150	150		N	
ACS	Agricultural chemical storage or equipment filling or cleaning area with safeguards	100	100		N	
ACR	Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed	50	50		N	
ADW	Agricultural drainage well² (Class V well - illegal³)	50	50		N	
AAT	Anhydrous ammonia tank (stationary tank)	50	50		N	
AB1	Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard)	50	20	100/40	N	
AB2	Animal building or poultry building, including a horse riding area, more than 1.0 animal unit	50	50	100	N	
ABS	Animal burial area, more than 1.0 animal unit	50	50		N	
FWP	Animal feeding or watering area within a pasture, more than 1.0 animal unit	50	50	100	N	
AF1	Animal feedlot, unroofed, 300 or more animal units (stockyard)	100	100	200	N	
AF2	Animal feedlot, more than 1.0, but less than 300 animal units (stockyard)	50	50	100	N	
AMA	Animal manure application	use discretion	use discretion		N	
REN	Animal rendering plant	50	50		N	
MS1	Manure (liquid) storage basin or lagoon, unpermitted or noncertified	300	300	600	N	
MS2	Manure (liquid) storage basin or lagoon, approved earthen liner	150	150	300	N	
MS3	Manure (liquid) storage basin or lagoon, approved concrete or composite liner	100	100	200	N	
MS4	Manure (solid) storage area, not covered with a roof	100	100	200	N	
OSC	Open storage for crops	use discretion	use discretion		N	

SSTS Related

AA1	Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day	300	300	600	N	
AA2	Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less	150	150	300	N	
AA3	Absorption area of a soil dispersal system, average flow 10,000 gal./day or less	50	50	100	N	
AA4	Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well)²	50/300/150⁴	50/300/150⁴	100/600/300⁴	N	
CSP	Cesspool	75	75	150	N	
AGG	Dry well, leaching pit, seepage pit	75	75	150	N	
*FD1	Floor drain, grate, or trough connected to a buried sewer	50	50		N	
*FD2	Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences	50	20		N	
*GW1	Gray-water dispersal area	50	50	100	N	
LC1	Large capacity cesspools (Class V well - illegal)²	75	75	150	N	
MVW	Motor vehicle waste disposal (Class V well - illegal)²	illegal	illegal		N	

PWS ID / FACILITY ID	1050001 S04	UNIQUE WELL NO.	721698
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PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well ¹	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well ² (Class V well - illegal ³)	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well) ²	illegal ³	illegal ³		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID

1050001 S04

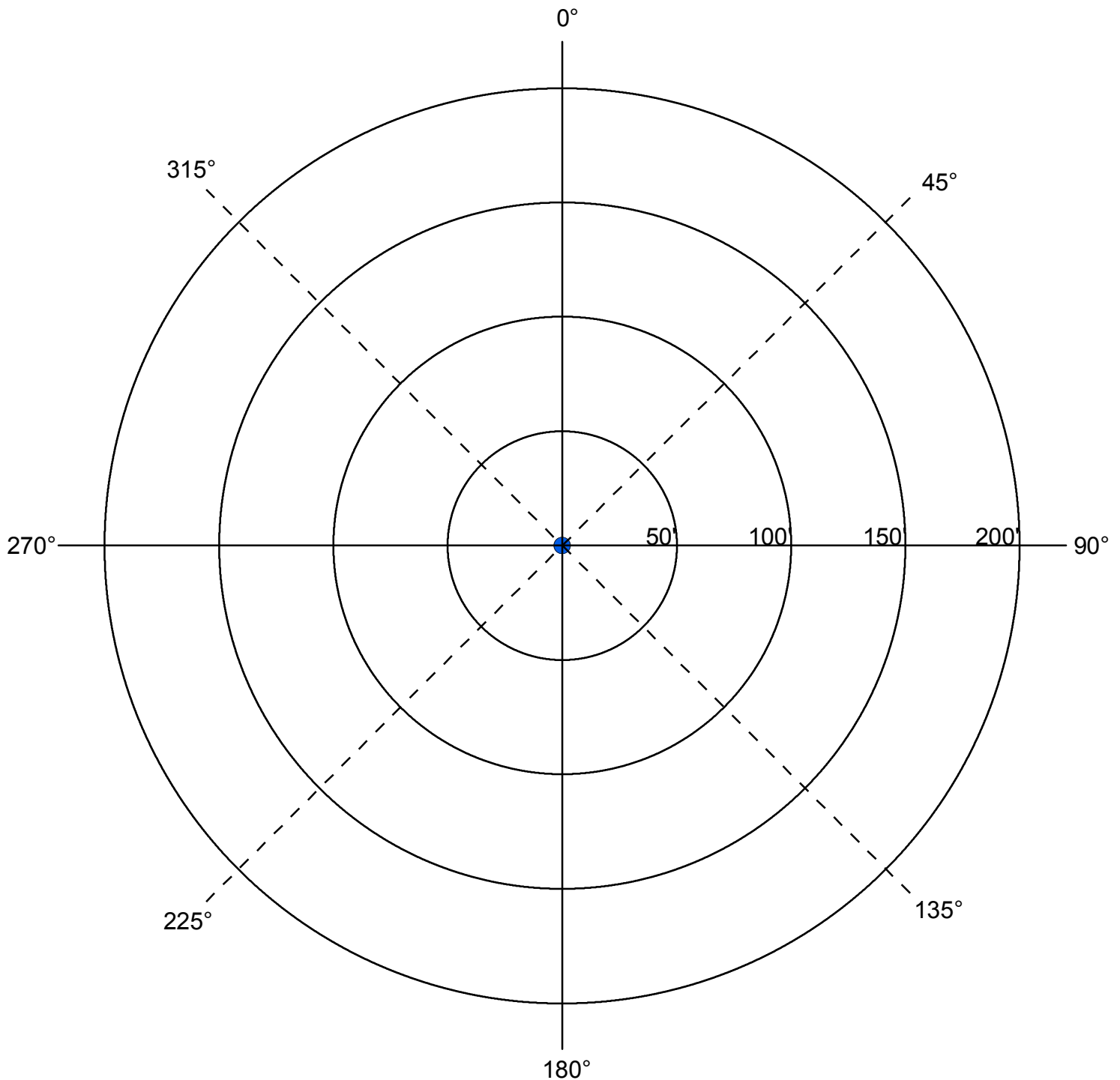
UNIQUE WELL NO.

721698

SETBACK DISTANCES

All potential contaminant sources must be noted on sketch.

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



Y	N	N/A

Were the isolation distances maintained for the new sources of contamination?

Is the system monitoring existing nonconforming sources of contamination?

Reminder Question: Were the wellhead protection measure(s) implemented?

INSPECTOR

Minerich, George

DATE

11 - 21 - 2014

[illegible]

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Section Receptionist: 651-201-4700
Division TDD: 651-201-5797 or MN Relay Service @ 1-800-627-3529 and ask for 651-201-5000

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1050001	COMMUNITY
NAME	Foley	
ADDRESS	Foley Water Superintendent, 251 Fourth Avenue North, P.O. Box 709, Foley, MN 563290709	

FACILITY (WELL) INFORMATION

NAME	Well #5	IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
FACILITY ID	S05	<input type="checkbox"/> YES (Please attach a copy)
UNIQUE WELL NO.	777222	<input type="checkbox"/> NO <input type="checkbox"/> UNDETERMINED
COUNTY	Benton	

PWS ID / FACILITY ID	1050001 S05	UNIQUE WELL NO.	777222
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PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)			LOCATION	
		Minimum Distances		Sensitive Well¹	Within 200 Ft. Y / N / U	Dist. from Well
		Community	Non- community			

Agricultural Related

*AC1	Agricultural chemical buried piping	50	50		N	
*AC2	Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight	50	50		N	
ACP	Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards	150	150		N	
ACS	Agricultural chemical storage or equipment filling or cleaning area with safeguards	100	100		N	
ACR	Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed	50	50		N	
ADW	Agricultural drainage well² (Class V well - illegal³)	50	50		N	
AAT	Anhydrous ammonia tank (stationary tank)	50	50		N	
AB1	Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard)	50	20	100/40	N	
AB2	Animal building or poultry building, including a horse riding area, more than 1.0 animal unit	50	50	100	N	
ABS	Animal burial area, more than 1.0 animal unit	50	50		N	
FWP	Animal feeding or watering area within a pasture, more than 1.0 animal unit	50	50	100	N	
AF1	Animal feedlot, unroofed, 300 or more animal units (stockyard)	100	100	200	N	
AF2	Animal feedlot, more than 1.0, but less than 300 animal units (stockyard)	50	50	100	N	
AMA	Animal manure application	use discretion	use discretion		N	
REN	Animal rendering plant	50	50		N	
MS1	Manure (liquid) storage basin or lagoon, unpermitted or noncertified	300	300	600	N	
MS2	Manure (liquid) storage basin or lagoon, approved earthen liner	150	150	300	N	
MS3	Manure (liquid) storage basin or lagoon, approved concrete or composite liner	100	100	200	N	
MS4	Manure (solid) storage area, not covered with a roof	100	100	200	N	
OSC	Open storage for crops	use discretion	use discretion		N	

SSTS Related

AA1	Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day	300	300	600	N	
AA2	Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less	150	150	300	N	
AA3	Absorption area of a soil dispersal system, average flow 10,000 gal./day or less	50	50	100	N	
AA4	Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well)²	50/300/150⁴	50/300/150⁴	100/600/300⁴	N	
CSP	Cesspool	75	75	150	N	
AGG	Dry well, leaching pit, seepage pit	75	75	150	N	
*FD1	Floor drain, grate, or trough connected to a buried sewer	50	50		N	
*FD2	Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences	50	20		N	
*GW1	Gray-water dispersal area	50	50	100	N	
LC1	Large capacity cesspools (Class V well - illegal)²	75	75	150	N	
MVW	Motor vehicle waste disposal (Class V well - illegal)²	illegal	illegal		N	

PWS ID / FACILITY ID	1050001 S05	UNIQUE WELL NO.	777222
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PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well¹	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well² (Class V well - illegal³)	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)²	illegal³	illegal³		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID

1050001 S05

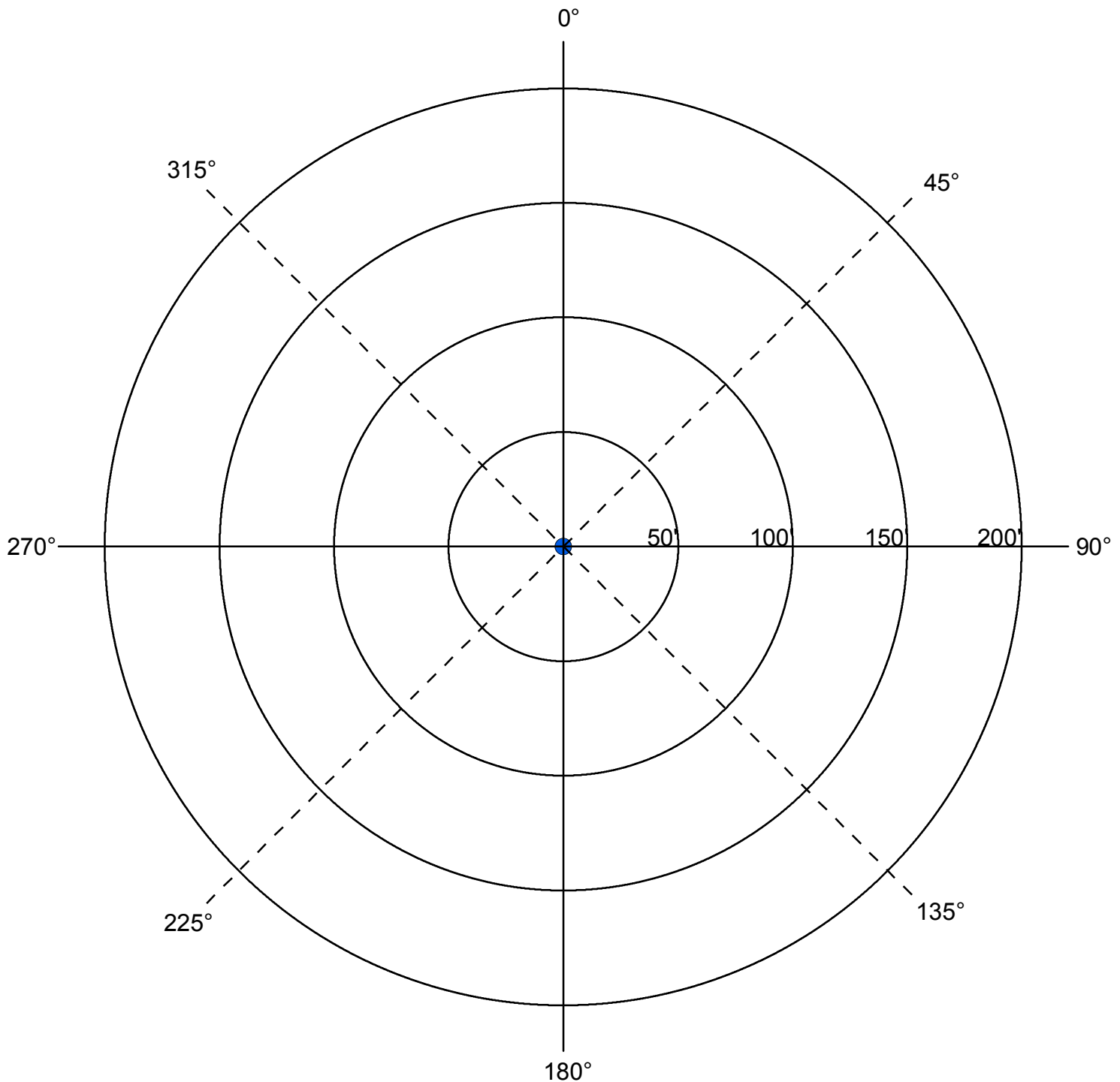
UNIQUE WELL NO.

777222

SETBACK DISTANCES

All potential contaminant sources must be noted on sketch.

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



Y	N	N/A

Were the isolation distances maintained for the new sources of contamination?

Is the system monitoring existing nonconforming sources of contamination?

Reminder Question: Were the wellhead protection measure(s) implemented?

INSPECTOR

Minerich, George

DATE

11 - 21 - 2014

PWS ID / FACILITY ID	1050001 S05	UNIQUE WELL NO.	777222
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RECOMMENDED WELLHEAD PROTECTION (WHP) MEASURES	WHP MEASURE IMPLEMENTED? Y or N	DATE VERIFIED

COMMENTS
Test Well 268522 - Seal Log H-256933 Test Well 770362 - Sealed Log H-286062

For further information, please contact:

Minnesota Department of Health
Drinking Water Protection Section
Source Water Protection Unit
P.O. Box 64975
St. Paul, Minnesota 55164-0975

Section Receptionist: 651-201-4700
Division TDD: 651-201-5797 or MN Relay Service @ 1-800-627-3529 and ask for 651-201-5000

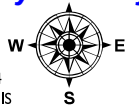
FOLEY - EAST DWSMA

Storm/Sanitary Sewers

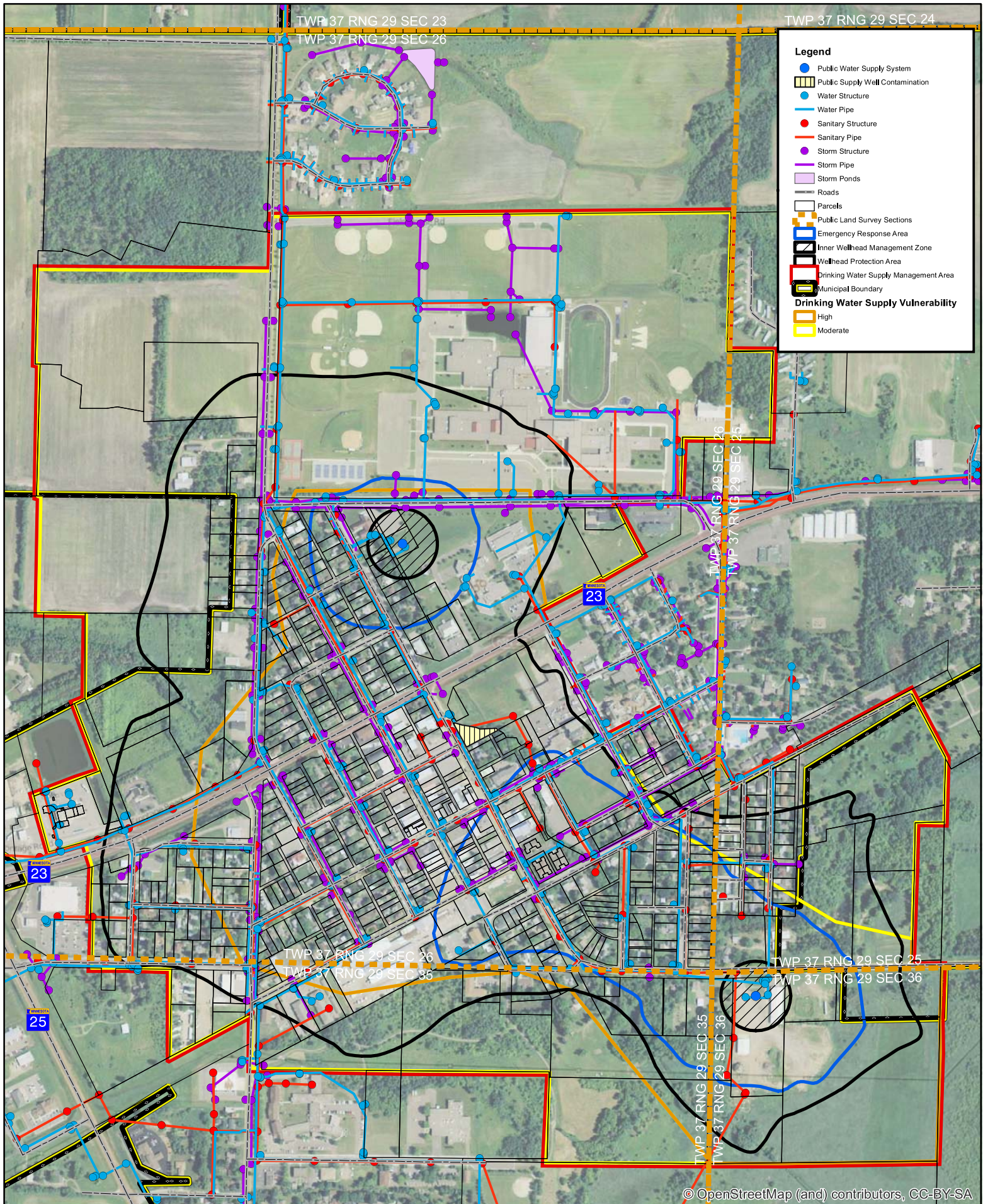


Appendix V - City of Foley

0 195 390 Feet



Data sources accessed October, 2014
Map produced by Rick Moore, Moore GIS



FOLEY - WEST DWSMA

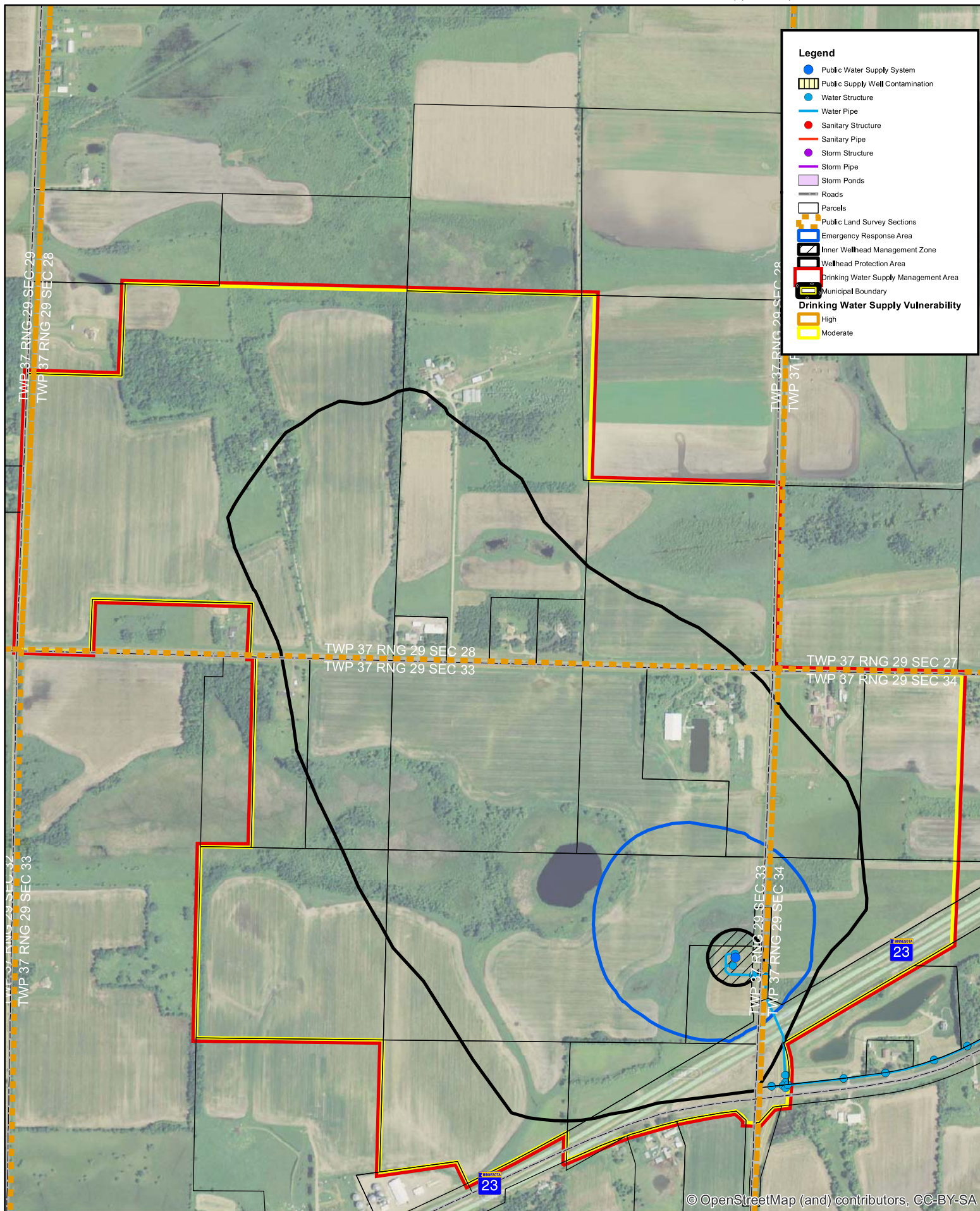
Storm/Sanitary Sewers



Appendix V - City of Foley



Data sources accessed October, 2014
Map produced by Rick Moore, Moore GIS





City of Foley

251 4TH AVENUE N • P.O. BOX 709

FOLEY, MINNESOTA 56329

(320) 968-7260 FAX: (320) 968-6325

www.ci.foley.mn.us

foleysb@netlinkcom.com

City of Foley – PWSID: 1050001 **2013 Drinking Water Report**

The City of Foley is issuing the results of monitoring done on its drinking water for the period from January 1 to December 31, 2013. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources.

Source of Water

The City of Foley provides drinking water to its residents from a groundwater source: three wells ranging from 55 to 108 feet deep that draw water from the Quaternary Buried Artesian aquifer.

The water provided to customers may meet drinking water standards, but the Minnesota Department of Health has also made a determination as to how vulnerable the source of water may be to future contamination incidents. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-201-4700 or 1-800-818-9318 (and press 5) during normal business hours. Also, you can view it on line at www.health.state.mn.us/divs/eh/water/swp/swa.

Call 320-968-4082 if you have questions about the City of Foley drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

Results of Monitoring

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2013. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)

Key to abbreviations:

MCLG	Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MRDL	Maximum Residual Disinfectant Level.
MRDLG	Maximum Residual Disinfectant Level Goal.
AL	Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.
90th Percentile Level	This is the value obtained after disregarding 10 percent of the samples taken that had the highest levels. (For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples.) Note: In situations in which only 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.
pCi/l	PicoCuries per liter (a measure of radioactivity).
Ppm	Parts per million, which can also be expressed as milligrams per liter (mg/l).
Ppb	Parts per billion, which can also be expressed as micrograms per liter (µg/l).
Nd	No Detection.
N/A	Not Applicable (does not apply).

Contaminant (units)	MCLG	MCL	Level Found		Typical Source of Contaminant
			Range (2013)	Average/ Result*	
Alpha Emitters (pCi/l) (10/15/2012)	0	15.4	N/A	3.2	Erosion of natural deposits.
Barium (ppm)	2	2	N/A	.12	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride (ppm)	4	4	1.3-2.1	1.54	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories.
Haloacetic Acids (HAA5) (ppb)	0	60	15.8-18.8	18.8	By-product of drinking water disinfection.
Nitrate (as Nitrogen) (ppm)	10.4	10.4	nd-1.6	1.6	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
TTHM (Total trihalomethanes) (ppb)	0	80	38.2-41.4	41.4	By-product of drinking water disinfection.

*This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.

Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.

Contaminant (units)	MRDLG	MRDL	****	*****	Typical Source of Contaminant
Chlorine (ppm)	4	4	.5-1.4	.87	Water additive used to control microbes.

****Highest and Lowest Monthly Average.

*****Highest Quarterly Average.

Contaminant (units)	MCLG	AL	90% Level	# sites over AL	Typical Source of Contaminant
Copper (ppm) (07/13/2011)	1.3	1.3	.32	0 out of 10	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb) (07/13/2011)	0	15	1.7	0 out of 10	Corrosion of household plumbing systems; Erosion of natural deposits.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Foley is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>. Monitoring may have been done for additional contaminants that do not have MCLs established for them and are not required to be monitored under the Safe Drinking Water Act. Results may be available by calling 651-201-4700 or 1-800-818-9318 during normal business hours.

Compliance with National Primary Drinking Water Regulations

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U. S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.



Minnesota Department of Health Environmental Health in Minnesota

PWSID: **1050001**
PWS Name: **Foley**
PWS Type: **Community**
PWS Status: **Active**

Public Water Supply Sources: Information from MNDWIS and CWI (sorted by Sample Point ID)

Source Type Codes: **GW** = Ground water; **SW** = Surface water; **GUI** = Ground water under influence

Location Source: **MGS** = digitized by the MN Geological Survey; * indicates incomplete records

MNDWIS and CWI data value discrepancies are shown in **RED** (0 or null values excepted).

O* = duplicate in Unverified Well Data; **R*** = duplicate in MNDWIS PWS Sources Removed from Flow; **S*** = duplicate in MNDWIS PWS Sources in Flow;

MNDWIS PWS SOURCES IN FLOW														
Source Info						MNDWIS Data				CWI Data				
Sample Point ID	Name	Type	Availability	Status	Well No. (link to Well Log(s))	Location Info (link to Map)	Drill Year	Depth (in feet)	Case Depth (in feet)	Case Diam. (in inches)	Drill Date	Depth Completed (in feet)	Case Depth (in feet)	Case Diam. (in inches)
S03	Well #3	GW	Primary	Active	240768 O*	02/02/2007 (G. Haglund)	1971	55	45	16	00-00-1971	55.00	45.00	16.00
S04	Well #4	GW	Primary	Active	721698	02/07/2005 (C. Wunderlich)	2005	60	50	12	02-28-2005	60.00	50.00	12.00
S05	Well #5	GW	Primary	Active	777222	09/28/2010 (K. Donabuer)	2010	108	94	12	10-07-2010	108.00	94.00	12.00

MNDWIS PWS SOURCES REMOVED FROM FLOW														
Source Info						MNDWIS Data				CWI Data				
Sample Point ID	Name	Type	Availability	Status	Well No. (link to Well Log(s))	Location Info (link to Map)	Drill Year	Depth (in feet)	Case Depth (in feet)	Case Diam. (in inches)	Drill Date	Depth Completed (in feet)	Case Depth (in feet)	Case Diam. (in inches)
S02	Well #2	GW	Emergency	Inactive	224818 O*	02/02/2007 (G. Haglund)	1969	63	48	12	03-00-1969	63.00	54.00	8.00

Unverified Wells

The following tables show information on wells whose existence (or previous existence) has not yet been confirmed.

UNVERIFIED Well Data														
Reference in Record	Name(s)	Unique Well Number	Drilled Depth (ft.)	Completed Depth (ft.)	Depth Cased (ft.)	Casing Diameter (in.)	Year Constructed	Construction Type	Year Out of Service	Sealing Record?	Year Sealed	Location Info	Comments	
A	.		85.0	85.0	85.0	6.0	Before 1929	Cable Tool/Bored	1943			1 blk. N of village ctr.	Refer.: 1929 MDH Sanitary Rpt.	
B	Creamery Well			65.0			Before 1940						Refer.: 1940 MDH Sanitary Rpt. Inter-connection with city supply. MGS Bull. 32 (65' depth)	
C	Well No. 1; Old Well; H12652		59.0	59.0		10.0	1943	Cable Tool/Bored	1981	Y	1991	Central part of village.	Refer.: 1943 MDH Sanitary Rpt. Screen provided. H12652. Can city confirm sealing record is for this well?	

UNVERIFIED Well Data													
Reference in Record	Name(s)	Unique Well Number	Drilled Depth (ft.)	Completed Depth (ft.)	Depth Cased (ft.)	Casing Diameter (in.)	Year Constructed	Construction Type	Year Out of Service	Sealing Record?	Year Sealed	Location Info	Comments
D	Well No. 1; New Well; Well No. 2	224819	67.0	67.0	57.0	12.0	1949	Cable Tool/Bored					Refer.: 1950 MDH Sanitary Rpt. CWI lists as "non-community". H12653 may be for sealing this well. Can city confirm?
E	Well No. 2; Well No. 3; H286063	224818 R*	60.0	60.0	49.0	12.0	1969			Y	2010		Refer.: 1974 MDH Sanitary Rpt. Well Rec'd: 2006 reconstr. relined 12" (to 48') well w/8" csg. to 54'. Grout bet. csqs. Sealed 2/3/10. H286063.
F	Well No. 3; Well No. 4	240768 S*	55.0	55.0	45.0	16.0	1971						Refer.: 1974 MDH Sanitary Rpt.
G	#2	H12653		68.0	58.0	14.0				Y	1991	37-29-25 SE/NW/SE. Pump hs. in old Fire Dept. bldg.	Refer.: MDH Wells Dbase. H12653. Can city determine if this is for Well Ref. "D", 224819?
H	.	751864										37-29-26 DBDDCA	Refer.: CWI (Internal) list of wells in section. Can city determine which well this matches?
I	Foley	224814	338.0	338.0	51.0	6.0	1963	Rotary/Drilled				37-29-35 AABBAC	Refer.: CWI. "Poss. test well for observ. well."
Databases Searched					Trivia								
County Well Index (1-mile radius); MDH DWP Microfiche; MDH 1Suite; Lakesnwoods.com; Biennial Report of the MN State Dairy and Food Commissioner-1907; Minnesota Geological Survey City Well File Folders; MGS Bulletin (27, 31, or 32); MNBrew.com (breweries); MDH DWP MNDWIS; Past and Present MN Railroad Stations; MDH WELLS					FOLEY, a railway village and the county seat, located in Gilmanton Township, Benton Co. The Great Northern Railway was built, in 1882-84. An attached photo from 1919 shows the location of the railroad station water tower and well. 1947 MGS Bull. 32 stated RR well is 96 ft. deep and well near courthouse (co. well?) is 56 ft. deep. No sealing record could be found for test well 758750, drilled in 2008. The Elm Grove creamery operated in the city in 1907 and is likely the creamery with the interconnection with the city supply.								
Unverified Well Data Compiled By: Geoffery Nash Compiled Date: 1/15/2013													

Source: MN Dep't. of Health - 1/15/2013

Restart

FOLEY
December 1983

System Data

PWS ID: 1050001
Population Served: 1980
Service Connections: 500
Plant Classification: D

Plant Data (1000 gal.)

Design Capacity: N/A
Emergency Capacity: N/A
Avg. Daily Prod.: 180

Storage Data (1000 gal.)

Elevated: 260
Ground: 0
Pressure Tank: 0
Total: 260

Comments:

D

E

F

Source Name Well #1 Well #2 Well #3 Dist.

Source Data

Availability	E	P	P
Year Installed	1949	1969	1971
Casing Diameter (in)		12	16
Casing Depth (ft)		49	45
Screen Length (ft)		11	10
Well Depth (ft)		60	55
Water-Bearing Formation	Sand & Gravel	Sand & Gravel	Sand & Gravel
Static Level (ft)	11	5	15
Drawdown (ft)			37
Pump Type	VT	VT	VT
and Capacity	225	310	250

Treatment

Disinfection
Aeration
Coagulation
Sedimentation
Filtration
Corrosion Control
& Stabilization
Softening
Taste & Odor
Ammoniation
Fluoridation
Other

Va

Va

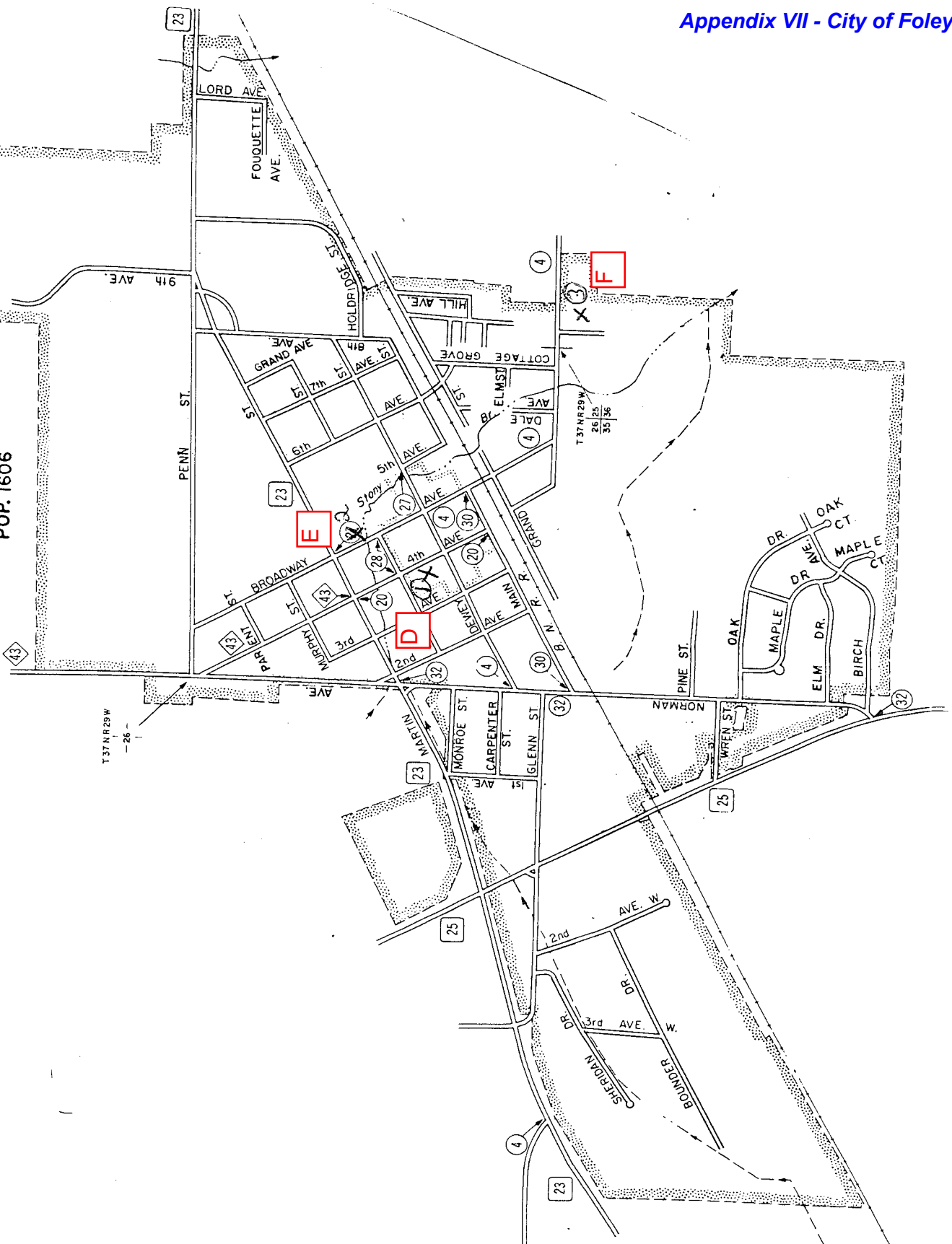
Chemical Analyses

Date of sample	2/67	11/71	1/76	12/83
Total Hardness (mg/l)	360	410	300	
Alkalinity (mg/l)	260	270	220	
Calcium (mg/l)	190	210	180	
Magnesium (mg/l)	170	200	120	
Iron (mg/l)	.08	.05	.02	
Manganese (mg/l)	.24	.12	.21	
Chloride (mg/l)	19	47	46	
Sulfate (mg/l)	80		57	
Potassium (mg/l)		3	1.8	
Total Solids (mg/l)				
Specific Cond.				
pH	7.5		7.4	
Arsenic (ug/l)				<5
Barium (ug/l)				<200
Cadmium (ug/l)				<1
Chromium (ug/l)				<5
Fluoride (mg/l)	.31	.2	.34	1.5
Lead (ug/l)				<10
Mercury (ug/l)				<.1
Nitrate Nitrogen (mg/l)	1	1.1	2	1.1
Selenium (ug/l)				<5
Silver (ug/l)				<5
Sodium (mg/l)		21	20	26.54
pH of Stability				
Special Analyses				

STATE OF MINNESOTA
Unique Well Number
240649

MGS, City Well files.
1/9/2013

MAP OF
FOLEY
BENTON COUNTY
POP. 1606



MGS, City Well files.
1/9/2013

BASIC INFORMATION ON MUNICIPAL WATER SUPPLIES

1. Municipality Foley
 2. County Benton
 3. District 8
 4. Ownership (municipal) (private -)
 5. Plan File No. _____
 6. Population (1950 census) _____
 7. Consumption (maximum -) (average -)
 8. Source gnd. H₂O
 9. Treatment (describe) none
 10. Storage elev. 60000

C

D

11. Well No.	Old	New			
12. Year installed		1950			
13. Casing diameter	12" ?	12			
14. Casing depth	40	57			
15. Well depth	58	67			
16. Screen length	10	10'			
17. Static level	45	45'			
18. Draw down		1'			
19. Pump (type & cap.)	VT 190	VT 300			Finished water
20. Total Hardness	240	270			
21. Alkalinity	210	210			
22. Calcium		180 (HSE)			
23. pH	7.7	7.9 (198)			
24. Iron	0.02	0.05			
25. Manganese	0.13	0.07			
26. Chlorides	16	15			
27. Sulphates	40	51			
28. Fluorides	2.8	1.01			
29. Nitrate Nitrogen	<0.01	<0.1			
30. Distribution system (type of mains, number of blocks, etc.)					

31. Cross-connections (list)

None

32. Remarks (R.R. crossings, underwater crossings, special hazards, etc.)

(USE OTHER SIDE)

RP - LX 1149

San. #41

Info-

T.D. Tobias
W.S.

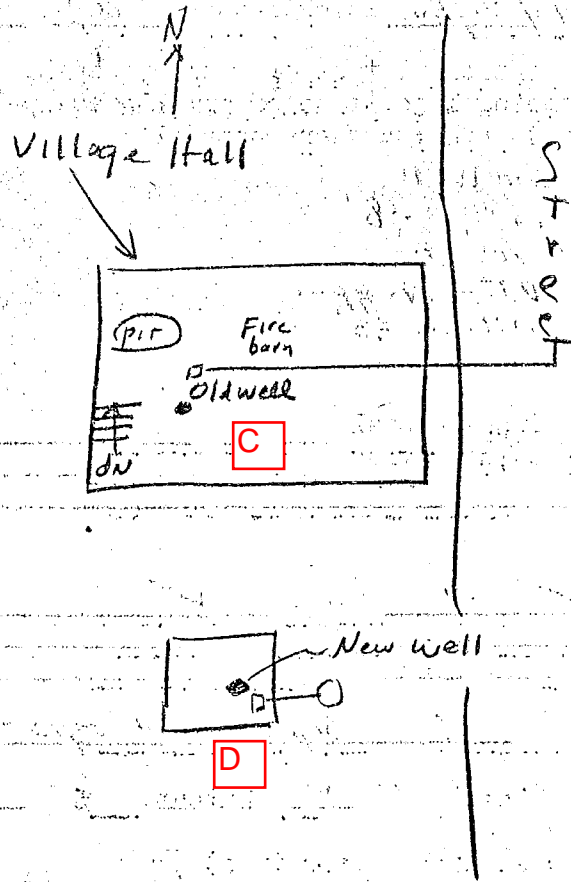
Basic Information on Municipal Water Supplies

MGS, City Well files.
1/9/2013

1. Municipality Foley Date 10/30/50 Investigator aps
2. Source (List description of location, designation, type of source, depth, screen length, drawdown, static level, casing size, type of pumping equipment, capacity of pumping equipment, etc.) (Sketch where possible)
- ☐ New Well
 Drilled, 12", 67'
 10' screen
 VT 210 gpm
 Static level 45' fr. grade
 300 gpm - d'd - 1/2'
- ☐ Old Well
 12" (?) - 58'
 10' screen
 VT - 190 gpm
 Static - 45'
3. Treatment (describe) None
 Polyphosphate stabilization _____ Iron Removal _____
 Softening _____ Chlorination _____
 Other _____
4. Storage:
 Capacity 60,000 Elevated ☒ Steel ☒
 Ground level _____ Wood _____
 Pressure _____ Concrete _____
5. Water and sewer in the same trench, extent ? Separate last 2 yrs - %
6. Do unprotected water and sewer crossings exist? Yes ☒ No _____ Extent _____ %
7. Stream, lake, and railroad crossings (List and describe construction)
2 - Intermittent stream, Stony Brook (1 X'ing 7' below stream bottom)
1 - R.R. X'ing no spec. const.
8. Hydrants (Describe drainage method) See page
9. Cross-connections to unsafe supplies (Describe location and defects of X-connected supplies) None Known
10. Blow-offs and automatic flush tanks (number, type, etc.) No
11. Railroad locomotive watering devices (describe, do they have stop and waste valves in pits directly connected to tank, or other defects) No
12. Service connections:
 Separated? No How far? ?
 Proportion separate ? % Total number of 300
13. Plumbing:
 Minn. Plumbing Code adopted No Enforced _____
 Other controls _____

(Use back and additional sheets for additional data and sketches referring to paragraph number on this page.)

1/9/2013





H. Unkn. City Well (751864)

E. Foley No. 2 (224818)

D. Foley No. 1 (224819)

I. Foley (224814)

F. Well No. 3 (240768)

MGS, Bulletin 32, 1947

BENTON COUNTY

57

township pre-Cambrian rocks crop out along Estes Brook at an elevation of 1060 feet. Table 15 shows the major variations.

TABLE 15. -- ELEVATIONS OF THE BEDROCK SURFACE, BENTON COUNTY

Location	Elevation above Sea Level (feet)
Along West Branch Rum River	1135
Gilman	1093
Oak Park	1070
Foley	1060
Estes Brook	1060
Rice	975
Sauk Rapids	960

GENERAL UNDERGROUND WATER CONDITIONS

The yield of water from the drift varies greatly. If, however, a layer of porous sand or gravel is penetrated at a depth of 50 to 150 feet below the surface, a moderate yield may be expected. Since several drift sheets are present, yellow clays and sands may be expected under the red Patrician till. These oxidized zones yield softer water than the bluish-gray drift that lies directly above the granite. The yellow color is due to the oxidation that penetrated from the surface downward while the clays and sands were near the surface, before the last drift sheet was deposited over them.

The outwash sediments and alluvial deposits along the Mississippi valley are saturated with water, but near the stream the exposed edges do not retain much water. Elsewhere they may yield large quantities.

In general the yield of water from the drift depends upon the thickness and depth of the sand and gravel beds associated with it. The supplies from shallow beds are generally meager, but the yield of the deeper zones is generous and permanent. The yields of individual wells are given in the discussion of the supplies of the various cities and villages in the county.

The head of the water varies with the relief of the region. In some localities the water is under sufficient pressure to lift it near the surface. Along the valleys some wells in the drift flow at the surface, but the yield is not great.

MUNICIPAL WATER SUPPLIES

FOLEY

The city of Foley is located in the south-central part of the county in Sec. 26, T. 37 N., R. 29 W. It is situated on the till plain at an elevation of 1130 feet, about 2 miles west of the St. Francis River. In this region granite bedrock lies from 50 to 75 feet below the surface.

The public water supply is taken from a well 56 feet deep that terminates in the glacial drift. A well near the courthouse reached granite at

C

Well near courthouse

MGS, Bulletin 32, 1947
(continued)

58 UNDERGROUND WATERS OF NORTHEASTERN MINNESOTA

96 feet and one near the depot struck the bedrock at 60 feet. The creamery well obtains its water at the drift-granite contact at a depth of 65 feet.

A farm well $3\frac{1}{2}$ miles east of the city entered granite at a depth of 47 feet and a well in Sec. 34, T. 37 N., R. 29 W., about $1\frac{1}{2}$ miles to the southwest, penetrated 65 feet of bluish-gray till over the granite.

RICE

The private wells in the village of Rice are mostly dug and driven to a depth of 30 to 60 feet. The Northern Pacific Railway Company's well at the depot is 70 feet deep in sand and gravel. The water rises to a static level about 25 feet below the surface. It is pumped at the rate of 8 gallons per minute. South of the village in Sec. 32, T. 38 N., R. 31 W., a farm well encountered granite at a depth of 90 feet, or 978 feet above sea level.²

A well at Jansky's potato warehouse in the village penetrated the following formations.

Well at Jansky's Potato Warehouse, Rice *

		DEPTH (feet)	THICKNESS (feet)
Drift	Sand and gravel	0-40	40
	Brown, stony hardpan	45-54	9
Pre-Cambrian	Sand and clay	54-93	39
	White clay	93-98	5
	Sticky red and white clay	98-185	87
	Greenish red and white clay	185-235	50
	Granite	entered	

* Data from G. Nugent, Sauk Rapids.

The well produced very little water, but a small yield was developed in the sands and clays from 65 to 95 feet below the surface. The residual clays over the granite were too impervious to allow water to reach the drilled hole.

SAUK RAPIDS

The city of Sauk Rapids is situated on the east bank of the Mississippi River near the southeast corner of the county. It adjoins East St. Cloud in Sec. 26, T. 36 N., R. 31 W. Many granite exposures occur in this vicinity and the mantle of glacial drift is thin. Therefore, all wells must be shallow and of large diameter if a moderately large volume of water is required.

The city has several wells. One is a drilled well 10 inches in diameter and 47 feet deep. The yield from this well is not sufficiently great to supply the demands of the population. Consequently, a well 16 feet in diameter was dug to a depth of 40 feet. The static level is about 25 feet below the surface.³

² Data from Frank Long, driller, Sauk Rapids.

³ Data from Kernan and Long, drillers, St. Cloud.

Well near RR depot

Creamery well

ABANDONED WELL RECORD

C

1. LOCATION OF WELL		MINNESOTA UNIQUE WELL NO. <u>H12652</u>	
County Name <u>Benton</u>		(leave blank if not known)	
Township Name <u>Gilmanton</u>	Township Number <u>37N</u> N or S	Range Number <u>29W</u> E or W	Section No. <u>25</u>
Fraction <u>se</u> <u>nw</u> <u>se</u>		4. WELL DEPTH (completed) <u>50'</u> ft.	Date sealed <u>8/7/91</u>
Numerical Street Address and City of Well Location or Distance from Road Intersection <u>251 Fourth Ave. Foley, Minn.</u>		5. DRILLING METHOD (if known) <input type="checkbox"/> Cable tool <input type="checkbox"/> Reverse <input type="checkbox"/> Driven <input type="checkbox"/> Dug <input type="checkbox"/> Hollow Rod <input type="checkbox"/> Air <input type="checkbox"/> Bored <input checked="" type="checkbox"/> NA <input type="checkbox"/> Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Power Auger	
Show exact location of well (in section grid with "X") 		6. OBSTRUCTIONS Well obstructed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Obstructions removed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If obstructions cannot be removed, contact MDH before sealing. Contact: <u>Scott Pluim</u> <u>8/7/91 MHD</u>	
2. PROPERTY OWNER'S NAME <u>City of Foley</u>		7. USE <input type="checkbox"/> Domestic <input type="checkbox"/> Monitoring <input type="checkbox"/> Heat Loop <input type="checkbox"/> Irrigation <input type="checkbox"/> Public <input type="checkbox"/> Industry <input type="checkbox"/> Test Well <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Commercial <input type="checkbox"/> Air Conditioning <input type="checkbox"/> _____	
Mailing Address if different than property address indicated above <u>81 Norman Ave. S.</u> <u>Foley, Mn. 56329</u>		8. CASING(S) <input checked="" type="checkbox"/> Black <input checked="" type="checkbox"/> Threaded <input type="checkbox"/> _____ <input type="checkbox"/> Galv. <input type="checkbox"/> Welded <input type="checkbox"/> Plastic <input type="checkbox"/> Stainless Steel <u>10</u> in. to <u>?</u> ft. _____ in. to _____ ft.	
3. FORMATION LOG If not known, indicate formation log from new well or nearby well.		9. SCREEN <input type="checkbox"/> Screened well from _____ ft. to _____ ft. (if known) <input type="checkbox"/> Open Hole from _____ ft. to _____ ft.	
10. STATIC WATER LEVEL <u>6</u> ft. <input checked="" type="checkbox"/> below <input type="checkbox"/> above land surface Date Measured <u>8/7/91</u>		11. WELLHEAD COMPLETION <input type="checkbox"/> Pitless Adapter <input checked="" type="checkbox"/> Found Buried <input type="checkbox"/> Basement offset <input type="checkbox"/> _____ <input type="checkbox"/> Well Pit	
16. REMARKS, ELEVATION, SOURCE OF DATA - CASINGS REMOVED, CASINGS PERFORATED, ETC. <u>Turbine stuck in well. But got Tremy pipe down to 50 feet.</u>		12. GROUTING INFORMATION <input type="checkbox"/> Heat Cement <input type="checkbox"/> Bentonite <input checked="" type="checkbox"/> Envirogrout Grout material <u>envirogrout</u> from <u>0</u> to <u>50</u> ft. cu. yds <u>1 1/2</u>	
Note: Well deeper than 50 ft. Likely this is Well Reference "C".		13. NEAREST SOURCES OF CONTAMINATION _____ feet _____ direction <u>NA</u> type Well disinfected before sealing? <input checked="" type="checkbox"/> Yes	
14. PUMP <input type="checkbox"/> Removed <input type="checkbox"/> Not Present Type: <input type="checkbox"/> Submersible <input checked="" type="checkbox"/> L.S. Turbine <input type="checkbox"/> Reciprocating <input type="checkbox"/> Jet <input type="checkbox"/> Centrifugal <input type="checkbox"/> _____		15. EXISTING WELLS (Please sketch locations of abandoned and active wells in remarks section or on back.) Other unused well(s) on property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Abandoned: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary <input type="checkbox"/> Not sealed	
17. WATER WELL CONTRACTORS CERTIFICATION This well was sealed under my jurisdiction and this report is true to the best of my knowledge and belief. <u>Donabauer Well & Pump Co. 73061</u> Licensee Business Name License No. <u>Route 2</u> Address <u>St. Joseph, Mn. 56374</u> Signed <u>Galen Donabauer</u> Date <u>8/12/91</u> <u>Galen Donabauer</u> Date <u>8/7/91</u> Name of Driller			

OFFICIAL ABANDONED WELL RECORD (May be used for Property Transfer)

IMPORTANT: FILE WITH DEED



Minnesota Unique Well No.

224819

County Benton
Quad Foley
Quad ID 155B

MINNESOTA DEPARTMENT OF HEALTH

**WELL AND BORING
RECORD**

Minnesota Statutes Chapter 103I

Entry Date 04/07/1988
Update Date 02/25/2008
Received Date

Well Name FOLEY1		Well Depth 67 ft.		Depth Completed 67 ft.		Date Well Completed 00/00/1949	
Township Range Dir Section Subsections Elevation		1140 ft.					
37 29 W 26 DCACBD		Elevation Method topographic map (+/- 5 feet)					
Well Address		Drilling Fluid		Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No			
FOLEY MN 56329		--		From Ft. to Ft.			
		Use Public Supply/non-community PWSID Source					
Geological Material		Color		Hardness		From To	
CLAY		RED				0 22	
HARDPAN						22 47	
GRAVEL & BOULDERS						47 67	
		Casing Type Steel (black or low carbon) Joint No Information Drive Shoe? <input type="checkbox"/> Yes					
		<input type="checkbox"/> No Above/Below ft.					
		Casing Diameter		Weight		Hole Diameter	
		12 in. to 57 ft.		lbs./ft.			
		Open Hole from ft. to ft.					
		Screen YES Make Type					
		Diameter		Slot/Gauze		Length	
		0		125		10	
						57 ft. and 67 ft.	
		Static Water Level					
		49 ft. from Land surface Date Measured 00/00/1949					
		PUMPING LEVEL (below land surface)					
		50 ft. after hrs. pumping 175 g.p.m.					
		Well Head Completion					
		Pitless adapter manufacturer Model					
		<input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade					
		<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)					
REMARKS		Grouting Information Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No					
DRILLED BY EITHER MEAD WELL CO. OR LATTERAL WELL CO. FORMELY FOLEY WELL NO. 2.							
Located by: Minnesota Geological Survey		Method: Digitized - scale 1:24,000 or larger (Digitizing Table)					
Unique Number Verification: Information from owner		Input Date: 04/12/1995					
System: UTM - Nad83, Zone15, Meters		X: 428960 Y: 5057188					
		Nearest Known Source of Contamination					
		_feet _direction _type					
		Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No					
		Pump <input type="checkbox"/> Not Installed Date Installed					
		Manufacturer's name Model number _ HP _ Volts					
		Length of drop Pipe _ft. Capacity _g.p.m. Type Turbine Material					
		Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes					
		<input type="checkbox"/> No					
		Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No					
		Well Contractor Certification					
First Bedrock		Aquifer Quat. Buried Unconf. Aquife					
Last Strat gravel (+larger)		Depth to Bedrock ft.					
County Well Index Online Report		224819				Printed 1/15/2013 HE-01205-07	

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes, Chapter 1031

MINNESOTA UNIQUE WELL
AND BORING NO.

E

WELL/BORING LOCATION

County Name

Benton

Township Name

Gilmanton 37

Range No.

29

Section No.

26

Fraction

NE. NE. SE.

GPS LOCATION: Latitude _____ degrees _____ minutes _____ seconds _____

Longitude _____ degrees _____ minutes _____ seconds _____

House Number, Street Name, City, and Zip Code of Well Location

or Fire Number

Show exact location of well/boring in section grid with "X."

Sketch map of well location. Showing property lines, roads, buildings, and direction.

N

W

E

S

1 Mile

PROPERTY OWNER'S NAME/COMPANY NAME

City of Foley

Property owner's mailing address if different than well location address indicated above.

PO BOX 709

Foley MN

56329

WELL/BORING OWNER'S NAME/COMPANY NAME

Rehabilitation to well #2

City of Foley. According

to PLAN # 062369

WELL/BORING OWNER'S MAILING ADDRESS IF DIFFERENT THAN PROPERTY OWNER'S ADDRESS INDICATED ABOVE.

Rehabilitation to well #2

City of Foley. According

to PLAN # 062369

GEOLOGICAL MATERIALS

COLOR

HARDNESS OF MATERIAL

FROM

TO

GEOLOGICAL MATERIALS

COLOR

HARDNESS OF MATERIAL

FROM

TO

GEOLOGICAL MATERIALS

COLOR

HARDNESS OF MATERIAL

FROM

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COLOR

HARDNESS OF MATERIAL

FROM

TO

GEOLOGICAL MATERIALS

COLOR

HARDNESS OF MATERIAL

FROM

TO

WELL/BORING DEPTH (completed)

63'

ft.

DATE WORK COMPLETED

2-17-06

DRILLING METHOD

☐ Cable Tool ☐ Driven ☐ Dug☐ Auger ☐ Rotary ☐ Jetted☐

DRILLING FLUID

WELL HYDROFRACTURED? ☐ Yes ☐ No

From _____ ft. To _____ ft.

USE ☐ Domestic ☐ Monitoring ☐ Heating/Cooling☐ Noncommunity PWS ☐ Environ. Bore Hole ☐ Industry/Commercial☒ Community PWS ☐ Irrigation ☐ Remedial☐ Elevator ☐ Dewatering ☐

CASING MATERIAL

☒ Steel ☐ Welded☐ Plastic ☐

CASING

Diameter

8 in. to 54 ft.

Weight

lbs./ft. 25.3 BE

Specifications

in. to _____ ft.

in. to _____ ft.

in. to _____ ft.

in. to _____ ft.

SCREEN

Make

Type

Slot/Gauze

Set between _____ ft. and _____ ft.

FITTINGS

STATIC WATER LEVEL

25 ft. ☒ Below ☐ Above land surface

Date measured 2-14-06

PUMPING LEVEL (below land surface)

34 ft. after 1 hrs. pumping 295 g.p.m.

WELL HEAD COMPLETION

☐ Pitless Adapter Manufacturer well seal Model 8"x3"☐ Casing Protection ☐ 12 in. above grade☐ At-grade (Environmental Well and Boring ONLY)

GROUTING INFORMATION

Well grouted? ☒ Yes ☐ NoGrout materials ☒ Heat cement ☐ Bentonite ☐ Concrete ☐ OtherFrom 0 To 54 ft. 16 ☐ Yds. ☐ BagsFrom _____ To _____ ft. ☐ Yds. ☐ BagsFrom _____ To _____ ft. ☐ Yds. ☐ Bags

NEAREST KNOWN SOURCE OF CONTAMINATION

_____ feet _____ direction _____ type

Well disinfected upon completion? ☐ Yes ☐ No

PUMP

☐ Not installed Date installed 2-14-06

Manufacturer's name GRUNDFOSS

Model Number 230 S150 SB HP 15 Volts 230

Length of drop pipe 47' ft. Capacity 295 g.p.m.

Type: ☒ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐

ABANDONED WELLS

Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE

Was a variance granted from the MDH for this well? ☐ Yes ☒ No TN#

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725.

The information contained in this report is true to the best of my knowledge.

Werner well 86726

Licensee Business Name

Lic. or Reg. No.

Authorized Representative Signature

Date

Name of Driller

Rollie Werner

MINN. DEPT OF HEALTH COPY

Wellname

FOLEY 2

Township

Range

Dir

Section

Subsection

Field Located

MGS

37

29

W

26

DBDDBD

Elevation

1135.00

ft.

Contact

FOLEY 3

FOLEY

MN

Changed

Well Depth

63.00

ft.

Depth Completed

63.00

ft.

Date Well Completed

1988/03/00

Drilling Method

Drilling Fluid

Well Hydrofractured?

☐ YES ☐ NO

From

ft. to

Use

Community Supply

Casing

Type

Drive Shot?

☐ YES ☐ NO

Hole Diameter (in.)

Diameter

12

Depth

48

12.00

in. from

0.00

to

48.00

ft.

ft./ft.

Screen

Yes

Open Hole(ft.)

From

to

Make

Type

Diameter

Slot

Length

Slot

12.00

15

48

ft. to

63

ft.

Static Water Level

37.00

ft.

Land surface

Date measured

1988/03/00

Pumping Level (below land surface)

ft. after

hrs. pumping

g.p.m.

Well Head Completion

Philos adapter manufacturer

Model

☐ Casing Protection

☐ 12 in. above grade

☐ At-grade (Environmental Wells and Borings ONLY)

☐ Basement offset

Grouting Information

Well grouted?

☐ YES ☐ NO

Nearest Known Source of Contamination

feet

Direction

Type

Well disinfected upon completion?

☐ YES ☐ NO

Pump

☐ Not installed

Date installed

Manufacturer's name

Model number

HP

Volts

Length of drop pipe

Material

Capacity

g.p.m.

Type

Abandoned Wells

Does property have any not in use and not sealed well(s)?

☐ YES ☐ NO

Variance

Was a variance granted from the MDH for this well?

☐ YES ☐ NO

Well Contractor Certification

Fischer Well Co.

73135

License Business Name

Lic. or Reg No.

FISHER

First Bedrock

St. Cloud Granite

Aquifer

Quart. Buried Arles. Aquifer

Last Strat

St. Cloud Granite

Depth to Bedrock

53.00

ft.

Copy Well Index v.1

REPORT

Printed on

2/8/2006

Name of Driller

Date

HC-01205-07 (Rev. 2/99)

WELL OR BORING LOCATION
County Name Benton

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING SEALING RECORD
Minnesota Statutes, Chapter 103/

Minnesota Well and Boring
Sealing No. 286063
Minnesota Unique Well No.
or W-series No. 224818
(Leave blank if not known)

Appendix W of F
286063

Township Name Gilmerton Township No. 37 Range No. 29 Section No. 26 Fraction (sm. < 1/4) 1/4 NE 1/4 Date Sealed 12/3/10 Date Well or Boring Constructed 2/17/2006

GPS LOCATION: Latitude _____ degrees _____ minutes _____ seconds Longitude _____ degrees _____ minutes _____ seconds

Numerical Street Address or Fire Number and City of Well or Boring Location
320 Broadway, Foley 56329

Show exact location of well or boring in section grid with "X." NN Sketch map of well or boring location, showing property lines, roads, and buildings. building

Depth Before Sealing 63 ft. Original Depth 63 ft.

AQUIFER(S)
☒ Single Aquifer ☐ Multiaquifer

WELL/BORING
☒ Water-Supply Well ☐ Monit. Well
☐ Env. Bore Hole ☐ Other _____

STATIC WATER LEVEL
☒ Measured ☐ Estimated Date Measured 12/3/2010
25 ft. ☒ below ☐ above land surface

CASING TYPE(S)
☒ Steel ☐ Plastic ☐ Tile ☐ Other _____

WELLHEAD COMPLETION

Outside: ☒ Well House ☐ At Grade ☐ Pitless Adapter/Unit ☐ Buried
☐ Well Pit ☐ Other _____

Inside: ☐ Basement Offset ☐ Well Pit ☐ Buried ☐ Other _____

PROPERTY OWNER'S NAME/COMPANY NAME
City of Foley

Property owner's mailing address if different than well location address indicated above
40 Milcon Inc. Attn: Josh Kopp
PO Box 454
North Branch, MN 55056

WELL OWNER'S NAME/COMPANY NAME
Same

Well owner's mailing address if different than property owner's address indicated above

CASING(S)

Diameter	Depth	Set in oversized hole?	Annular space initially grouted?
<u>12</u> in. from <u>0</u> to <u>48</u> ft.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown	
<u>8</u> in. from <u>0</u> to <u>54</u> ft.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
_____ in. from _____ to _____ ft.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	

SCREEN/OPEN HOLE
Screen from 48 to 63 ft. Open Hole from _____ to _____ ft.

OBSTRUCTIONS
☐ Rods/Drop Pipe ☐ Check Valve(s) ☐ Debris ☐ Fill ☒ No Obstruction

Type of Obstructions (Describe) _____

Obstructions removed? ☐ Yes ☐ No Describe _____

PUMP
Type Submersible
☒ Removed ☐ Not Present ☐ Other _____

METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE:
☒ No Annular Space Exists ☐ Annular Space Grouted with Tremie Pipe ☐ Casing Perforation/Removal

_____ in. from _____ to _____ ft.	_____ Perforated <input type="checkbox"/> Removed <input type="checkbox"/>
_____ in. from _____ to _____ ft.	_____ Perforated <input type="checkbox"/> Removed <input type="checkbox"/>

Type of Perforator _____
☐ Other _____

GROUTING MATERIAL(S) (One bag of cement = 94 lbs., one bag of bentonite = 50 lbs.)

Grouting Material	_____ from _____ to _____ ft.	_____ yards	_____ bags
<u>BENTONITE</u>	<u>0</u> to <u>63</u>	<u>8</u>	
_____	_____ to _____	_____	_____
_____	_____ to _____	_____	_____

OTHER WELLS AND BORINGS
Other unsealed and unused well or boring on property? ☐ Yes ☒ No How many? _____

LICENSED OR REGISTERED CONTRACTOR CERTIFICATION
This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING
Original well drilled Mar. 1969
reconstructed Feb. 2006.
See attached copy of
Well and Boring Record.

MINN. DEPT. OF HEALTH COPY H 286063

Major Drilling
Licensee Business Name Steven Nelson License or Registration No. 2896
Certified Representative Signature Craig Medek Certified Rep. No. 949 Date 12/3/10
Name of Person Sealing Well or Boring _____



RR water tower, Foley, 1919. Courtesy Todd Driver Collection.



Water tower, 1940, Courtesy LakesnWoods.com

WELL OR BORING LOCATION
County Name Benton
Township Name Silmerton Township No. 37 Range No. 29 Section No. 26 Fraction (sm. & lg.) 1/4 NE 1/4

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING SEALING RECORD
Minnesota Statutes, Chapter 1037

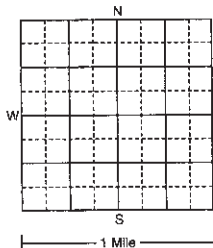
Minnesota Well and Boring
Sealing No. 286063
Minnesota Unique Well No.
or W-series No. 224818
(Leave blank if not known)

Appendix VII City of Foley
286063
224818

GPS LOCATION: Latitude _____ degrees _____ minutes _____ seconds
Longitude _____ degrees _____ minutes _____ seconds

Numerical Street Address or Fire Number and City of Well or Boring Location
320 Broadway, Foley 56329

Show exact location of well or boring in section grid with "X".



Sketch map of well or boring location, showing property lines, roads, and buildings.



Date Sealed 12/3/10 Date Well or Boring Constructed 2/17/2006
Depth Before Sealing 63 ft. Original Depth 63 ft.

AQUIFER(S) ☒ Single Aquifer ☐ Multiaquifer
WELL/BORING ☒ Water-Supply Well ☐ Monit. Well
☐ Env. Bore Hole ☐ Other _____
STATIC WATER LEVEL ☒ Measured ☐ Estimated Date Measured 12/3/2010
25 ft. ☒ below ☐ above land surface

CASING TYPE(S) ☒ Steel ☐ Plastic ☐ Tile ☐ Other _____

WELLHEAD COMPLETION
Outside: ☒ Well House ☐ At Grade ☐ Pitless Adapter/Unit ☐ Well Pit ☐ Other _____
Inside: ☐ Basement Offset ☐ Well Pit ☐ Buried ☐ Other _____

PROPERTY OWNER'S NAME/COMPANY NAME
City of Foley
Property owner's mailing address if different than well location address indicated above
90 Milcon Inc. Attn: Josh Kopp
PO Box 454
North Branch, MN 55056

CASING(S)
Diameter 12 in. from 0 to 48 ft. Set in oversize hole? ☐ Yes ☐ No Annular space initially grouted? ☐ Yes ☐ No ☒ Unknown
8 in. from 0 to 54 ft. ☒ Yes ☐ No ☒ Yes ☐ No ☐ Unknown
_____ in. from _____ to _____ ft. ☐ Yes ☐ No ☐ Yes ☐ No ☐ Unknown

WELL OWNER'S NAME/COMPANY NAME
Same

SCREEN/OPEN HOLE
Screen from 48 to 63 ft. Open Hole from _____ to _____ ft.

OBSTRUCTIONS
☐ Rods/Drop Pipe ☐ Check Valve(s) ☐ Debris ☐ Fill ☒ No Obstruction
Type of Obstructions (Describe) _____

GEOLOGICAL MATERIAL COLOR HARDNESS OR FORMATION FROM TO

Obstructions removed? ☐ Yes ☐ No Describe _____

PUMP
Type Submersible
☒ Removed ☐ Not Present ☐ Other _____

METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE:
☒ No Annular Space Exists ☐ Annular Space Grouted with Tremie Pipe ☐ Casing Perforation/Removal
_____ in. from _____ to _____ ft. ☐ Perforated ☐ Removed
_____ in. from _____ to _____ ft. ☐ Perforated ☐ Removed
Type of Perforator _____
☐ Other _____

GROUTING MATERIAL(S) (One bag of cement = 94 lbs., one bag of bentonite = 50 lbs.)
Grouting Material BENTONITE from 0 to 63 ft. _____ yards 8 bags
_____ from _____ to _____ ft. _____ yards _____ bags
_____ from _____ to _____ ft. _____ yards _____ bags

OTHER WELLS AND BORINGS
Other unsealed and unused well or boring on property? ☐ Yes ☒ No How many? _____

LICENSED OR REGISTERED CONTRACTOR CERTIFICATION
This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Major Drilling License or Registration No. 2896
Steven Nelson 949 12/3/10
Certified Representative Signature Certified Rep. No. Date
Craig Medek
Name of Person Sealing Well or Boring

REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING
Original well drilled Mar. 1969
Reconstructed Feb. 2006.
See attached copy of
Well and Boring Record.

MINN. DEPT. OF HEALTH COPY H 286063

WELL/BORING LOCATION					MINNESOTA DEPARTMENT OF HEALTH WELL AND BORING RECORD <i>Minnesota Statutes, Chapter 1031</i>		224818 224818	
County Name Benton								
Township Name Gilmanton	Township No. 37	Range No. 29	Section No. 26	Fraction NE. NE. SE.	WELL/BORING DEPTH (completed) 63'	ft.	DATE WORK COMPLETED 2-17-06	
GPS LOCATION: Latitude _____ degrees _____ minutes _____ seconds _____ Longitude _____ degrees _____ minutes _____ seconds _____					DRILLING METHOD <input type="checkbox"/> Cable Tool <input type="checkbox"/> Driven <input type="checkbox"/> Dug <input type="checkbox"/> Auger <input type="checkbox"/> Rotary <input type="checkbox"/> Jetted <input type="checkbox"/>			
House Number, Street Name, City, and Zip Code of Well Location _____ or Fire Number _____					DRILLING FLUID _____			WELL HYDROFRACTURED? <input type="checkbox"/> Yes <input type="checkbox"/> No
Show exact location of well/boring in section grid with "X." Sketch map of well location. Showing property lines, roads, buildings, and direction.					USE <input type="checkbox"/> Domestic <input type="checkbox"/> Monitoring <input type="checkbox"/> Heating/Cooling <input type="checkbox"/> Noncommunity PWS <input type="checkbox"/> Environ. Bore Hole <input type="checkbox"/> Industry/Commercial <input checked="" type="checkbox"/> Community PWS <input type="checkbox"/> Irrigation <input type="checkbox"/> Remedial <input type="checkbox"/> Elevator <input type="checkbox"/> Dewatering <input type="checkbox"/>			
					CASING MATERIAL <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Plastic		Drive Shoe? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Threaded <input type="checkbox"/> Welded	
					HOLE DIAM. _____ in. to _____ ft.			
PROPERTY OWNER'S NAME/COMPANY NAME City of Foley					Casing Diameter _____ Weight _____ Specifications _____			
Property owner's mailing address if different than well location address indicated above. PO BOX 709 Foley MN 56329					SCREEN _____ OPEN HOLE _____			
WELL/BORING OWNER'S NAME/COMPANY NAME					Make _____ From _____ ft. To _____ ft.			
Well/boring owner's mailing address if different than property owner's address indicated above. Rehabilitation to well #2 City of Foley. According to PLAN # 062369					Type _____ Diam. _____ Slot/Gauze _____ Length _____ Set between _____ ft. and _____ ft. FITTINGS _____			
GEOLOGICAL MATERIALS					STATIC WATER LEVEL 25 ft. <input checked="" type="checkbox"/> Below <input type="checkbox"/> Above land surface Date measured 2-14-06			
COLOR					PUMPING LEVEL (below land surface) 34 ft. after 1 hrs. pumping 295 g.p.m.			
HARDNESS OF MATERIAL					WELL HEAD COMPLETION <input type="checkbox"/> Pitless Adapter Manufacturer well seal Model 8"x3" <input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Well and Boring ONLY)			
FROM					GROUTING INFORMATION Well grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Grout materials <input checked="" type="checkbox"/> Neat cement <input type="checkbox"/> Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____ From 0 To 54 ft. 16 <input type="checkbox"/> Yds. <input type="checkbox"/> Bags From _____ To _____ ft. _____ <input type="checkbox"/> Yds. <input type="checkbox"/> Bags From _____ To _____ ft. _____ <input type="checkbox"/> Yds. <input type="checkbox"/> Bags			
TO					NEAREST KNOWN SOURCE OF CONTAMINATION _____ feet _____ direction _____ type			
					Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No			
					PUMP <input type="checkbox"/> Not installed Date installed 2-14-06			
					Manufacturer's name GRUNDFOSS			
					Model Number 230 S150 SB HP 15 Volts 230			
					Length of drop pipe 47' ft. Capacity 295 g.p.m.			
					Type: <input checked="" type="checkbox"/> Submersible <input type="checkbox"/> L.S. Turbine <input type="checkbox"/> Reciprocating <input type="checkbox"/> Jet <input type="checkbox"/>			
					ABANDONED WELLS Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
					VARIANCE Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No TN# _____			
					WELL CONTRACTOR CERTIFICATION This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.			
REMARKS, ELEVATION, SOURCE OF DATA, etc. Relined 12" well w/ 8" steel casing w/ 12"x8" K Packer at top of screen. Cement grout between two casings.					Licensee Business Name Werner well Lic. or Reg. No. 86726			
MINN. DEPT OF HEALTH COPY 224818					Authorized Representative Signature Rollie Werner Date _____			
					Name of Driller Rollie Werner			

Wellname

FOLEY 2

Township

Range

Dir

Section

Subsection

Field Located

MGS

37

29

W

26

DBDDBD

Elevation

1135.00

ft.

Contact

FOLEY 3

FOLEY

MN

Changed

Well Depth

63.00

ft

Depth Completed

63.00

ft

Date Well Completed

1988/03/00

Drilling Method

Drilling Fluid

Well Hydrofractured?

☐ YES ☐ NO

From

ft. to

Use

Community Supply

Casing

Type

Drive Shoe?

☐ YES ☐ NO

Hole Diameter (in.)

Diameter

12

Depth

48

12.00

in. from

0.00

to

48.00

ft.

ft./ft.

Description

Color

Hardness

From

To (ft.)

DIRT

BLACK

0

2

MUD & CLAY

GRAY

2

8

HARDPAN

8

34

CLAY & GRAVEL

BROWN

34

35

GRAVEL & SAND & ROCK

35

53

LEDGE OF ROCK

53

57

GRANITE

57

63

Screen

Yes

Open Hole(ft.)

From

to

Make

Type

Diameter

Slot

Length

Slot

12.00

15

48

ft. to

63

ft.

Static Water Level

37.00

ft.

Land surface

Date measured

1988/03/00

Pumping Level (below land surface)

ft. after

hrs. pumping

g.p.m.

Well Head Completion

Filter adapter manufacturer

Model

☐ Casing Protection

☐ 12 in. above grade

☐ At-grade (Environmental Wells and Borings ONLY)

☐ Basement offset

Grouting Information

Well grouted?

☐ YES ☐ NO

Nearest Known Source of Contamination

feet

Direction

Type

Well disinfected upon completion?

☐ YES ☐ NO

Pump

☐ Not installed

Date installed

Manufacturer's name

Model number

HP

Volts

Length of drop pipe

Material

Capacity

g.p.m.

Type

Abandoned Wells

Does property have any not in use and not sealed well(s)?

☐ YES ☐ NO

Variance

Was a variance granted from the MDH for this well?

☐ YES ☐ NO

Well Contractor Certification

Fischer Well Co.

73135

License Business Name

Lic. or Reg No.

FISHER

First Bedrock

St. Cloud Granite

Aquifer

Quart. Buried Arles. Aquifer

Last Strat

St. Cloud Granite

Depth to Bedrock

53.00

ft.

Copy Well Index v.1

REPORT

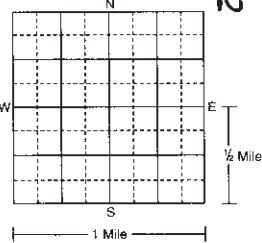
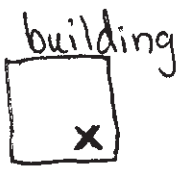
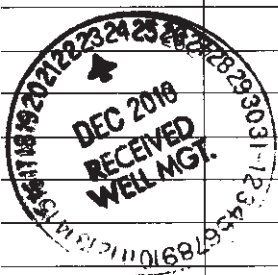
Printed on

2/8/2006

Name of Driller

Date

HC-01205-07 (Rev. 2/99)

MINNESOTA DEPARTMENT OF HEALTH WELL AND BORING SEALING RECORD <small>Minnesota Statutes, Chapter 103/</small>					Minnesota Well and Boring Sealing No. 286063 Minnesota Unique Well No. or W-series No. 224818 <small>(Leave blank if not known)</small>	
WELL OR BORING LOCATION					<div style="border: 1px solid black; padding: 2px; display: inline-block;"> Appendix VI City of Foley </div>	
County Name Benton						
Township Name Gilmerton	Township No. 37	Range No. 29	Section No. 26	Fracture (sm. < 1/4") W/E	Date Sealed 12/3/10	Date Well or Boring Constructed 2/17/2006
GPS LOCATION: Latitude _____ degrees _____ minutes _____ seconds Longitude _____ degrees _____ minutes _____ seconds					Depth Before Sealing 63 ft. Original Depth 63 ft.	
Numerical Street Address or Fire Number and City of Well or Boring Location 320 Broadway, Foley 56329					STATIC WATER LEVEL <input checked="" type="checkbox"/> Measured <input type="checkbox"/> Estimated Date Measured 12/3/2010 25 ft. <input checked="" type="checkbox"/> below <input type="checkbox"/> above land surface	
Show exact location of well or boring in section grid with "X." 					CASING TYPE(S) <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Plastic <input type="checkbox"/> Tile <input type="checkbox"/> Other _____	
Sketch map of well or boring location, showing property lines, roads, and buildings. 					WELLHEAD COMPLETION Outside: <input checked="" type="checkbox"/> Well House <input type="checkbox"/> At Grade <input type="checkbox"/> Pitless Adapter/Unit <input type="checkbox"/> Well Pit <input type="checkbox"/> Other _____ Inside: <input type="checkbox"/> Basement Offset <input type="checkbox"/> Buried <input type="checkbox"/> Other _____	
PROPERTY OWNER'S NAME/COMPANY NAME City of Foley					CASING(S) Diameter 12 in. from 0 to 48 ft. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown 8 in. from 0 to 54 ft. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown _____ in. from _____ to _____ ft. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Property owner's mailing address if different than well location address indicated above 40 Milcon Inc. Attn: Josh Kopp PO Box 454 North Branch, MN 55056					SCREEN/OPEN HOLE Screen from 48 to 63 ft. Open Hole from _____ to _____ ft.	
WELL OWNER'S NAME/COMPANY NAME Same					OBSTRUCTIONS <input type="checkbox"/> Rods/Drop Pipe <input type="checkbox"/> Check Valve(s) <input type="checkbox"/> Debris <input type="checkbox"/> Fill <input checked="" type="checkbox"/> No Obstruction Type of Obstructions (Describe) _____	
GEOLOGICAL MATERIAL COLOR HARDNESS OR FORMATION FROM TO If not known, indicate estimated formation log from nearby well or boring.					Obstructions removed? <input type="checkbox"/> Yes <input type="checkbox"/> No Describe _____	
					PUMP Type Submersible <input checked="" type="checkbox"/> Removed <input type="checkbox"/> Not Present <input type="checkbox"/> Other _____	
					METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE: <input checked="" type="checkbox"/> No Annular Space Exists <input type="checkbox"/> Annular Space Grouted with Tremie Pipe <input type="checkbox"/> Casing Perforation/Removal _____ in. from _____ to _____ ft. <input type="checkbox"/> Perforated <input type="checkbox"/> Removed _____ in. from _____ to _____ ft. <input type="checkbox"/> Perforated <input type="checkbox"/> Removed Type of Perforator _____ <input type="checkbox"/> Other _____	
					GROUTING MATERIAL(S) (One bag of cement = 94 lbs., one bag of bentonite = 50 lbs.) Grouting Material BENTWITE from 0 to 63 ft. _____ yards 8 bags _____ from _____ to _____ ft. _____ yards _____ bags _____ from _____ to _____ ft. _____ yards _____ bags	
					OTHER WELLS AND BORINGS Other unsealed and unused well or boring on property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No How many? _____	
					LICENSED OR REGISTERED CONTRACTOR CERTIFICATION This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.	
REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING Original well drilled Mar. 1969 Reconstructed Feb. 2006. See attached copy of Well and Boring Record.					Major Drilling Licensee Business Name Steven Nelson License or Registration No. 2896 Certified Representative Signature Steven Nelson Certified Rep. No. 949 Date 12/3/10 Craig Medek Name of Person Sealing Well or Boring	
MINN. DEPT. OF HEALTH COPY H 286063						

WELL OR BORING LOCATION
County Name Benton

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING SEALING RECORD
Minnesota Statutes, Chapter 1037

Minnesota Well and Boring
Sealing No.
Minnesota Unique Well No.
or W-series No.
(Leave blank if not known)

Appendix VII City of Foley
286063
224818

Township Name Silmerton Township No. 37 Range No. 29 Section No. 26 Fraction (sm & lg) 1/4 NE 1/4

Date Sealed 12/3/10

Date Well or Boring Constructed 2/17/2006

GPS LOCATION: Latitude _____ degrees _____ minutes _____ seconds
Longitude _____ degrees _____ minutes _____ seconds

Depth Before Sealing 63 ft.

Original Depth 63 ft.

Numerical Street Address or Fire Number and City of Well or Boring Location
320 Broadway, Foley 56329

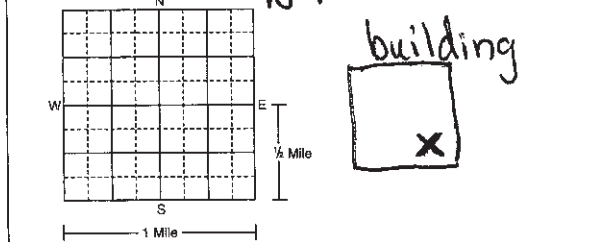
AQUIFER(S)
☒ Single Aquifer ☐ Multiaquifer

STATIC WATER LEVEL
☒ Measured ☐ Estimated Date Measured 12/3/2010

Show exact location of well or boring in section grid with "X."

WELL/BORING
☒ Water-Supply Well ☐ Monit. Well
☐ Env. Bore Hole ☐ Other _____

25 ft. ☒ below ☐ above land surface



CASING TYPE(S)
☒ Steel ☐ Plastic ☐ Tile ☐ Other _____

WELLHEAD COMPLETION
Outside: ☒ Well House ☐ At Grade ☐ Pitless Adapter/Unit ☐ Well Pit ☐ Other _____
Inside: ☐ Basement Offset ☐ Well Pit ☐ Buried ☐ Other _____

PROPERTY OWNER'S NAME/COMPANY NAME
City of Foley

CASING(S)
Diameter 12 in. from 0 to 48 ft.

Set in oversize hole? ☐ Yes ☐ No Annular space initially grouted? ☒ Yes ☐ No ☐ Unknown

Property owner's mailing address if different than well location address indicated above
90 Milcon Inc. Attn: Josh Kopp

8 in. from 0 to 54 ft.

☒ Yes ☐ No ☒ Yes ☐ No ☐ Unknown

PO Box 454

_____ in. from _____ to _____ ft.

☐ Yes ☐ No ☐ Yes ☐ No ☐ Unknown

WELL OWNER'S NAME/COMPANY NAME
Same

SCREEN/OPEN HOLE
Screen from 48 to 63 ft.

Open Hole from _____ to _____ ft.

Well owner's mailing address if different than property owner's address indicated above

OBSTRUCTIONS
☐ Rods/Drop Pipe ☐ Check Valve(s) ☐ Debris ☐ Fill ☒ No Obstruction

Type of Obstructions (Describe) _____

Obstructions removed? ☐ Yes ☐ No Describe _____

PUMP
Type Submersible

☒ Removed ☐ Not Present ☐ Other _____

GEOLOGICAL MATERIAL COLOR HARDNESS OR FORMATION FROM TO

Method Used to Seal Annular Space Between 2 Casings, or Casing and Bore Hole:
☒ No Annular Space Exists ☐ Annular Space Grouted with Tremie Pipe ☐ Casing Perforation/Removal

_____ in. from _____ to _____ ft. ☐ Perforated ☐ Removed

If not known, indicate estimated formation log from nearby well or boring.

_____ in. from _____ to _____ ft. ☐ Perforated ☐ Removed

Type of Perforator _____

REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING

Grouting Material(S) (One bag of cement = 94 lbs., one bag of bentonite = 50 lbs.)

Grouting Material BENTONITE from 0 to 63 ft. _____ yards 8 bags

Original well drilled Mar. 1969

_____ from _____ to _____ ft. _____ yards _____ bags

_____ from _____ to _____ ft. _____ yards _____ bags

Reconstructed Feb. 2006.

Other unsealed and unused well or boring on property? ☐ Yes ☒ No How many? _____

LICENSED OR REGISTERED CONTRACTOR CERTIFICATION
This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

See attached copy of Well and Boring Record.

Major Drilling
Licensee Business Name Steven Nelson License or Registration No. 2896

Certified Representative Signature Craig Meder Certified Rep. No. 949 Date 12/3/10

MINN. DEPT. OF HEALTH COPY

Name of Person Sealing Well or Boring _____

HE-01434-11 IC# 140-0423

2/08R

E

Minnesota Unique Well No.

224818

County Benton
Quad Foley
Quad ID 155B

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING
RECORD

Minnesota Statutes Chapter 103I

Entry Date 04/07/1988
Update Date 10/31/2012
Received Date 02/21/2006

Well Name FOLEY2		Well Depth 63 ft.		Depth Completed 63 ft.		Date Well Completed 03/00/1969	
Township Range Dir Section Subsections Elevation		1131 ft.					
37 29 W 26 DBDDCA		Elevation Method topographic map (+/- 5 feet)		Drilling Method --			
Well Address		Drilling Fluid		Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No			
FOLEY MN		--		From Ft. to Ft.			
Geological Material		Color		Hardness		From To	
DIRT		BLACK				0 2	
MUD & CLAY		GRAY				2 8	
HARDPAN						8 34	
CLAY & GRAVEL		BROWN				34 35	
GRAVEL & SAND & ROCK						35 53	
LEDGE OF ROCK						53 57	
GRANITE						57 63	
Use Abandoned		Status Sealed		Casing Type Steel (black or low carbon)		Joint No Information	
				Drive Shoe? <input type="checkbox"/> Yes			
				<input checked="" type="checkbox"/> No Above/Below ft.			
Casing Diameter		Weight		Hole Diameter			
12 in. to 48 ft.		lbs./ft.					
8 in. to 54 ft.		lbs./ft.					
Open Hole from ft. to ft.							
Screen YES Make Type							
Diameter		Slot/Gauze		Length		Set Between	
12				15		48 ft. and 63 ft.	
Static Water Level							
37 ft. from Land surface		Date Measured 03/00/1969					
PUMPING LEVEL (below land surface)							
34 ft. after 1 hrs. pumping 295 g.p.m.							
Well Head Completion							
Pitless adapter manufacturer Model							
<input type="checkbox"/> Casing Protection		<input type="checkbox"/> 12 in. above grade					
<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)							
REMARKS		Grouting Information		Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
WELL RECONSTRUCTED 2-17-2006 BY WERNER WELL CO.		Grout Material: Neat Cement		from to 54 ft.		16 bags	
RELINED 12" WELL W/ 8" STEEL CASING W/ 12" X** K PACKER AT TOP OF SCREEN, CEMENT							
GROUT BETWEEN TWO CASINGS.							
WELL ORIGINALLY DRILLED BY FISCHER WELL CO.							
FOMERLY FOLEY NO. 3							
SEALED 12-3-2010 BY 2896; PREVIOUS USE: PC							
Located by: Minnesota Department of Health		Method: GPS SA Off (averaged)					
Unique Number Verification: Information from owner		Input Date: 02/02/2007					
System: UTM - Nad83, Zone15, Meters		X: 429070 Y: 5057360					
Nearest Known Source of Contamination							
_feet _direction _type							
Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No							
Pump <input type="checkbox"/> Not Installed Date Installed 02/14/2006							
Manufacturer's name GRUNDFOS		Model number 230S1505B		HP 15 Volts 230			
Length of drop Pipe 47 ft.		Capacity 295 g.p.m		Type Submersible		Material	
Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes							
<input checked="" type="checkbox"/> No							
Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
Well Contractor Certification							
United States Geological Survey		USGS					
License Business Name		Lic. Or Reg. No.		Name of Driller			
First Bedrock Foley Granite		Aquifer Multiple					
Last Strat Foley Granite		Depth to Bedrock 53 ft.					
County Well Index Online Report		224818				Printed 1/14/2013	
						HE-01205-07	



Minnesota Unique Well No.

240768

County Benton
Quad Foley
Quad ID 155B

MINNESOTA DEPARTMENT OF HEALTH

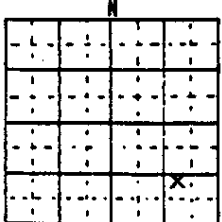

**WELL AND BORING
RECORD**

Entry Date 09/15/1992
Update Date 09/06/2007
Received Date

Minnesota Statutes Chapter 103I

Well Name FOLEY3		Well Depth 55 ft.		Depth Completed 55 ft.		Date Well Completed 00/00/1971	
Township Range Dir Section Subsections Elevation		1114 ft.					
37 29 W 36 BBBBAC		Elevation Method topographic map (+/- 5 feet)					
Well Address		Drilling Fluid		Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No			
FOLEY MN 56329		--		From Ft. to Ft.			
Geological Material		Color		Hardness		From To	
NO RECORD						0 55	
		Use Community Supply		PWS ID 1050001		Source S03	
		Casing Type Steel (black or low carbon)		Joint No Information		Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No	
				Above/Below 1 ft.			
		Casing Diameter		Weight		Hole Diameter	
		16 in. to 45 ft.		lbs./ft.			
		Open Hole from ft. to ft.					
		Screen YES Make Type					
		Diameter		Slot/Gauze		Length Set Between	
						10 45 ft. and 55 ft.	
		Static Water Level					
		15 ft. from Land surface		Date Measured 00/00/1971			
		PUMPING LEVEL (below land surface)					
		ft. after hrs. pumping		g.p.m.			
		Well Head Completion					
		Pitless adapter manufacturer Model					
		<input type="checkbox"/> Casing Protection		<input checked="" type="checkbox"/> 12 in. above grade			
		<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)					
NO REMARKS		Grouting Information		Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Located by: Minnesota Department of Health		Method: GPS SA Off (averaged)					
Unique Number Verification: N/A		Input Date: 02/02/2007					
System: UTM - Nad83, Zone15, Meters		X: 429588 Y: 5056869					
		Nearest Known Source of Contamination					
		_feet _direction _type					
		Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No					
		Pump <input type="checkbox"/> Not Installed		Date Installed			
		Manufacturer's name		Model number		HP Volts	
		Length of drop Pipe _ft.		Capacity _g.p.m.		Type Turbine Material	
		Abandoned Wells		Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No			
		Variance		Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No			
First Bedrock		Aquifer Quat. Buried Artes. Aquifer					
Last Strat sand +larger		Depth to Bedrock ft.					
County Well Index Online Report		240768				Printed 1/14/2013 HE-01205-07	

ABANDONED WELL RECORD

1. LOCATION OF WELL					MINNESOTA UNIQUE WELL NO. #12653	
County Name Benton						
Township Name Gilmanton	Township Number 37N	Range Number 29W	Section No. 25	Fraction se n w se	4. WELL DEPTH (completed) 68' ft.	Date sealed 8/7/91
Numerical Street Address and City of Well Location or Distance from Road Intersection 251 4th Ave. Foley, Mn.					5. DRILLING METHOD (if known) <input type="checkbox"/> Cable tool <input type="checkbox"/> Reverse <input type="checkbox"/> Driven <input type="checkbox"/> Dug <input type="checkbox"/> Hollow Rod <input type="checkbox"/> Air <input type="checkbox"/> Bored <input checked="" type="checkbox"/> NA <input type="checkbox"/> Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Power Auger	
Show exact location of well (in section grid with "X") <div style="display: flex; align-items: center;"> <div style="text-align: center;">  <p>1 mile</p> </div> <div style="margin-left: 20px;"> Sketch map of well location  </div> </div>					6. OBSTRUCTIONS Well obstructed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Obstructions removed <input type="checkbox"/> Yes <input type="checkbox"/> No If obstructions cannot be removed, contact MDH before sealing.	
2. PROPERTY OWNER'S NAME City of Foley					8. CASING(S) <input checked="" type="checkbox"/> Black <input checked="" type="checkbox"/> Threaded <input type="checkbox"/> _____ <input type="checkbox"/> Galv. <input type="checkbox"/> Welded <input type="checkbox"/> Plastic <input type="checkbox"/> Stainless Steel 14 in. to 58 ft. _____ in. to _____ ft.	
3. FORMATION LOG If not known, indicate formation log from new well or nearby well.					9. SCREEN <input checked="" type="checkbox"/> Screened well from 58 ft. to 68 ft. (if known) <input type="checkbox"/> Open Hole from _____ ft. to _____ ft.	
10. STATIC WATER LEVEL 6 ft. <input checked="" type="checkbox"/> below <input type="checkbox"/> above land surface Date Measured 8/7/91					11. WELLHEAD COMPLETION <input type="checkbox"/> Pitless Adapter <input type="checkbox"/> Found Buried <input type="checkbox"/> Basement offset <input checked="" type="checkbox"/> Pump House <input type="checkbox"/> Well Pit in old Fire Dept. Bldg.	
16. REMARKS, ELEVATION, SOURCE OF DATA - CASINGS REMOVED, CASINGS PERFORATED, ETC. 68' Deep - Old City Well-not used.					12. GROUTING INFORMATION <input type="checkbox"/> Neat Cement <input type="checkbox"/> Bentonite <input checked="" type="checkbox"/> Envirogrout Grout material Envirogrout from 6 to 68 ft. cu. yds. 3	
13. NEAREST SOURCES OF CONTAMINATION _____ feet _____ direction NA type Well disinfected before sealing? <input checked="" type="checkbox"/> Yes					14. PUMP <input checked="" type="checkbox"/> Removed <input type="checkbox"/> Not Present Type: <input type="checkbox"/> Submersible <input checked="" type="checkbox"/> L.S. Turbine <input type="checkbox"/> Reciprocating <input type="checkbox"/> Jet <input type="checkbox"/> Centrifugal <input type="checkbox"/> _____	
15. EXISTING WELLS (Please sketch locations of abandoned and active wells in remarks section or on back.) Other unused well(s) on property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Abandoned: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary <input type="checkbox"/> Not sealed					17. WATER WELL CONTRACTORS CERTIFICATION This well was sealed under my jurisdiction and this report is true to the best of my knowledge and belief. Donabauer Well & Pump Co. 73061 Licensee Business Name License No. Rte 2 Address St. Joseph, Mn 56374 Signed <i>[Signature]</i> 8/12/91 Galen Donabauer Date 8/7/91 Name of Driller	

OFFICIAL ABANDONED WELL RECORD (May be used for Property Transfer)

IMPORTANT: FILE WITH DEED

Which city well is this for?

H

Minnesota Unique Well No.

751864

County Benton
Quad Foley
Quad ID 155B

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING
RECORD

Entry Date 04/13/2007
Update Date 03/10/2010
Received Date

Minnesota Statutes Chapter 103I

Well Name FOLEY, CITY OF		Well Depth	Depth Completed	Date Well Completed	
Township Range Dir Section Subsections Elevation		0 ft.	0 ft.	0	
37 29 W 26 DBDDCA Elevation Method		Drilling Method			
Geological Material		Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No		
		From Ft. to Ft.			
		Use Unknown			
		Casing Type	Joint	Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No	Above/Below ft.
		Casing Diameter	Weight		Hole Diameter
		Open Hole from ft. to ft.			
		Screen			
		Diameter	Slot/Gauze	Length	Set Between
		Static Water Level			
ft. from Date Measured					
PUMPING LEVEL (below land surface)					
ft. after hrs. pumping g.p.m.					
Well Head Completion					
Pitless adapter manufacturer Model					
<input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade					
<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)					
NO REMARKS		Grouting Information		Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Located by: Minnesota Department of Health		Method: GPS SA Off (averaged)			
Unique Number Verification: Info/GPS from data source		Input Date: 03/22/2007			
System: UTM - Nad83, Zone15, Meters		X: 429051 Y: 5057361			
		Nearest Known Source of Contamination		0 feet direction type	
		Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No			
		Pump <input type="checkbox"/> Not Installed		Date Installed	
		Manufacturer's name		Model number HP Volts	
		Length of drop Pipe ft.		Capacity g.p.m. Type Material	
		Abandoned Wells		Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No	
		Variance		Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No	
		Well Contractor Certification			
First Bedrock	Aquifer	License Business Name	Lic. Or Reg. No.	Name of Driller	
Last Strat	Depth to Bedrock ft.				
County Well Index Online Report		751864	Printed 1/15/2013 HE-01205-07		

Minnesota Unique Well No.

224814

County Benton
Quad Foley
Quad ID 155B

MINNESOTA DEPARTMENT OF HEALTH

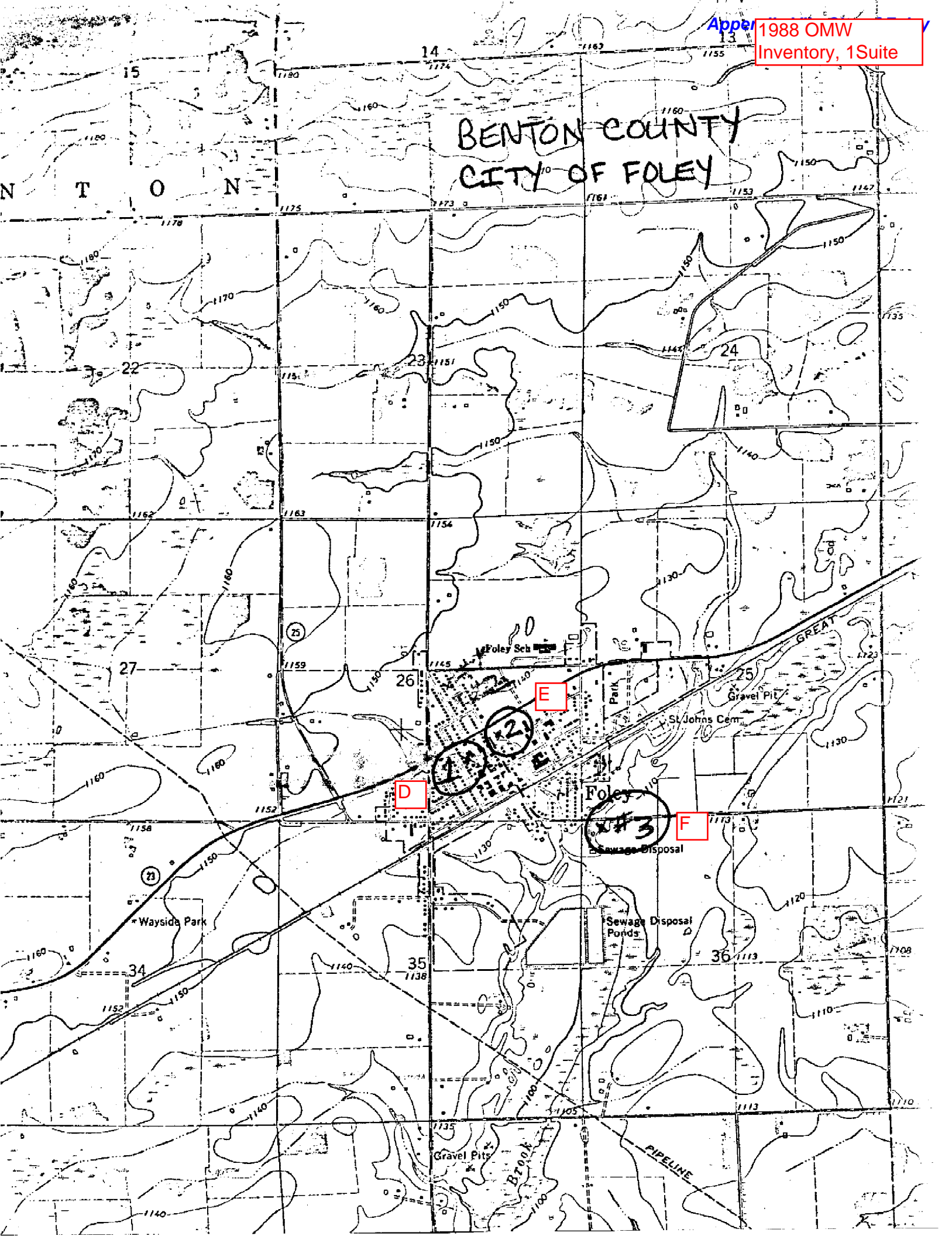
**WELL AND BORING
RECORD**

Minnesota Statutes Chapter 103I

Entry Date 04/07/1988
Update Date 06/26/2009
Received Date

Well Name FOLEY		Well Depth 338 ft.		Depth Completed 338 ft.		Date Well Completed 09/05/1963	
Township Range Dir Section Subsections Elevation		1128 ft.					
37 29 W 35 ABBAC		Elevation Method topographic map (+/- 5 feet)		Drilling Method Reverse Rotary			
Well Address		Drilling Fluid		Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No			
FOLEY MN 56329		--		From Ft. to Ft.			
Geological Material		Color		Hardness		From To	
CLAY		BROWN				0 18	
CLAY		GRAY				18 23	
CLAY		BROWN				23 38	
SAND & CLAY & ROCKS		GRAY				38 51	
GRANITE		RED				51 190	
GRANITE		PNK/GRY				190 288	
GRANITE		GRAY				288 313	
GRANITE		PNK/GRY				313 318	
GRANITE		RED				318 338	
Casing Type		Joint		No Information		Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No Above/Below ft.	
6 in. to 51 ft.		lbs./ft.		6 in. to 338 ft.			
Open Hole		from 51 ft. to 338 ft.					
Screen NO		Make		Type			
Diameter		Slot/Gauze		Length		Set Between	
Static Water Level		8 ft. from Land surface		Date Measured 09/05/1963			
PUMPING LEVEL (below land surface)		208 ft. after 4 hrs. pumping		30 g.p.m.			
Well Head Completion		Pitless adapter manufacturer		Model			
<input type="checkbox"/> Casing Protection		<input type="checkbox"/> 12 in. above grade		<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)			
REMARKS		Grouting Information		Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No			
POSSIBLE TEST WELL OF OBSERVATION WELL.							
Located by: Minnesota Geological Survey		Method: Digitized - scale 1:24,000 or larger (Digitizing Table)					
Unique Number Verification: Other, note in remarks		Input Date: 04/12/1995					
System: UTM - Nad83, Zone15, Meters		X: 429170 Y: 5056875					
Nearest Known Source of Contamination		__feet __direction __type					
Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No							
Pump <input type="checkbox"/> Not Installed		Date Installed					
Manufacturer's name		Model number		__ HP __ Volts			
Length of drop Pipe __ft.		Capacity __g.p.m		Type Material			
Abandoned Wells		Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Variance		Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Well Contractor Certification		Fischer Well Co.		73135			
License Business Name		Lic. Or Reg. No.		Name of Driller			
County Well Index Online Report		224814				Printed 1/15/2013 HE-01205-07	

BENTON COUNTY
CITY OF FOLEY



BENTON COUNTY - CITY OF FOLEY

Below are descriptions of your municipal wells according to our records. On the opposite side of this sheet is a map of your municipality, and the location of your municipal wells, located as accurately as possible using our present records. Please confirm or correct the location and numbering of your wells and include any wells that are not shown.

[illegible]

Thank you for your cooperation!

FORM 9-1642
(1-68)

Well No.

37.29.26 dca 2

WELL SCHEDULE

37-29-26 dca dca d

U. S. DEPT. OF THE INTERIOR

GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

MASTER CARD

Record by Holgeson Source of data Village of Foley Date 5 Oct 71 Map Foley 7 1/2State Minn County Benton City or town 0.5Latitude: 45 39 55 N Longitude: 093 54 40 Sequential number: 2Lat-long accuracy: 2 037 N 29 S Sec 26 NE SW SE: 474Local well number: 037 N 29 W 26 PCA 2 Other number: #2Local use: Village of FoleyOwner or name: VILLAGE FOLEY Address: Foley (in fire house)

Ownership: County, Fed Govt, City, Corp or Co, Private, State Agency, Water Dist

Use of: (A) Air cond, (B) Bottling, (C) Comm, (D) Dewater, (E) Power, (F) Fire, (G) Dom, (H) Irr, (I) Med, (J) Ind, (K) P S, (L) Rec, (M) Water

Stock, Instit, Unused, Repressure, Recharge, Desal-P S, Desal-other, Other

Use of Well: (A) Anode, (B) Drain, (C) Seismic, (D) Heat Res, (E) Obs, (F) Oil-gas, (G) Recharge, (H) Test, (I) Unused, (J) Withdraw, (K) Waste, (L) Destroyed

DATA AVAILABLE: Well data 1 Freq. W/L meas: 1 Field aquifer char: 1Hyd. lab. data: #7 city employeeQual. water data, type: 1Freq. sampling: 1 Pumpage inventory no, period: 1968Aperture cards: 1Log data: Drillers

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 67 ft Meas. accuracy: 3Depth cased: (first perf.) 57 ft Casing type: 12 in Diam. 12 in

Finish: (C) porous concrete, (F) gravel w. concrete, (H) gravel w. screen, (I) horiz. gallery, (J) open end, (K) perf., (L) screen, (M) sd. pt., (N) shored, (O) open hole, (P) other

Method: (A) air bored, (B) cable, (C) dug, (D) hyd jetted, (E) air percussion, (F) reverse, (G) trenching, (H) driven, (I) wash, (J) other

Date Drilled: 1949 9 4 9 Pump intake setting: 15 ftDriller: Mead or Lateral

Lift: (A) air, (B) bucket, (C) cent, (D) jet, (E) multiple, (F) multiple, (G) none, (H) piston, (I) rot, (J) submerg, (K) turb, (L) other

Power: (type): diesel, elec, gas, gasoline, hand, gas, wind, H.P. 15 Trans. or meter no. 15Descrip. MP: 1140 Accuracy: 4Alt. LSD: 47 ft above MP; 47 ft below LSD Accuracy: 4Date meas: 175 gpm Yield: 175 gpm Method determined: 175Drawdown: 1 ft Accuracy: 3 Pumping period: 175 hrsQUALITY OF WATER DATA: Iron 1 Sulfate 1 Chloride 1 Hard. 1Sp. Conduct 1 K x 10 1 Temp. 1 Date sampled 1Taste, color, etc. 1

224819

Latitude-Longitude

HYDROGEOLOGIC CARD

WELL No. _____

Section: 12

Drainage Basin: B Subbasin: 218H

Topo of well site: (D) depression, stream channel, dunes, flat, hilltop, sink, swamp, (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) offshores, pediment, hillside, terrace, undulating, valley flat

MAJOR AQUIFER: system _____ series B origin G aquifer, formation, group 1 G

Lithology: _____ Origin: _____ Thickness: _____ ft

Length of well open to: _____ ft Depth to top of: _____ ft

MINOR AQUIFER: system _____ series _____ origin _____ aquifer, formation, group _____

Lithology: _____ Origin: _____ Thickness: _____ ft

Length of well open to: _____ ft Depth to top of: _____ ft

Intervals Screened: 57-67

Depth to consolidated rock: _____ ft Source of data: _____

Depth to basement: _____ ft Source of data: _____

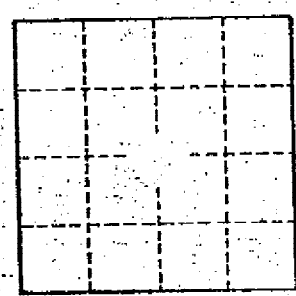
Surficial material: _____ Infiltration characteristics: 4

Coefficient Trans: _____ gpd/ft Coefficient Storage: _____

Coefficient Perm: _____ gpd/ft² Spec cap: 175 gpm/ft; Number of geologic cards: _____

0-22 Red clay
 22-47 Hardpan
 47-67 Gravel & boulders

B/1073



1968 Pumping
 47,643,500 gal

(Repaired by Fischer?)

1140
 67
 1073

LOCATED BY

- ☐ Address Verification
- ☐ Name on Mailbox
- ☐ Lot Block
- ☐ Plat Book
- ☐ Info. From Owner
- ☐ Info. From Neighbor
- ☒ Other City
- ☐ Can't Locate State Why

Well No.

Approp.

1988 OMW
Inventory, 1 Suite

WELL LOG STATEMENT

Well No.



Report Promptly To Director, Division Of Waters, Centennial Office Bldg., St. Paul 1, Minn.

Location of Well (address)

Locate Well on
Plat of Section

Sec. 26

Two 3

Range 2

Drilled for: Village of Foley Driller Fisher

Address _____

Date of Completion MARCH 1969 REPORT OF FINAL PUMPING TEST

Type of well _____ Depth 63 Duration of Test _____ Hrs. _____ Min. Date _____
Dug, Driven, Bored, Drilled

asing diameter 12 inch, from 0 to 48. Rate of Pumping _____ GPM

_____ inch, from _____ to _____ Static Water Level 37' Ft. Above land surface
Below

_____ inch, from _____ to _____ Water Level While Pumping _____ Ft.

Screen: Length 15' Diameter 12" Slot size _____ Use: Domestic ☐ Industrial ☐ Irrigation ☐

ump: Type _____ Horsepower _____ Public supply ☒ Commercial ☐ Stock ☐

WELL LOG

[illegible]

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR

GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

224814

MASTER CARD

Record by C. Cox Source of data driller Date 4-9-70 Map 155-B

State Minnesota County Benton Co. (or town) 05

Latitude: 45 39 43 N Longitude: 09 35 41 W Sequential number: 1

Lat-long accuracy: 2 0370 N 29 0 W 35 NE NE NE 474 elev. 1128.5

Local well number: 037 N 29 W 35 A. AA Other number:

Local use: FISCHER Owner or name: Village of Foley, Ted Tobias

Owner or name: VILLAGE FOLEY Address: Foley Minn

Ownership: County, Fed Gov't, City, Corp or Co, Private, State Agency, Water Dist

Use of: (A) Air cond, Bottling, Comms, Devater, Power, Fire, Dom, Irr, Med, Ind, P S, Reg. (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z)

Water: (S) Stock, Instit, Unused, Repressure, Recharge, Desal-P S, Desal-other, Other (T) (U) (V) (W) (X) (Y) (Z)

Use of: (A) Anode, Drain, Seismic, Heat Res, Obs, Oil-gas, Recharge, Test, Unused, Withdraw, Waste, Destroyed. (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z)

Well:

DATA AVAILABLE: Well data 1 Freq. W/L meas.: Field aquifer char:

Hyd. lab. data:

Qual. water data; type:

Freq. sampling: Pumpage inventory: period:

Aperture cards:

Log data:

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 338 ft Meas. 3 accuracy 3

Depth cased; (first perf.) 51 ft Casing type: Diam. 6 in 6 1/4 in 51-33.4

Finish: (C) porous concrete, (F) gravel w. concrete, (G) gravel w. (screen), (H) horiz. gallery, (I) open end, (J) other X

Method: (A) air bored, (B) cable, (C) dug, (D) hyd jetted, (E) air rot., (F) percussive, (G) rotary, (H) trenching, (I) driven, (J) drive wash, (K) other R

Date Drilled: Sept 5, 1963 Pump intake setting: 9.63 ft

Driller: Fischer address

Lift: (A) air, (B) bucket, (C) cent, (D) jet, (E) multiple, (F) multiple, (G) none, (H) piston, (I) rot, (J) submerg, (K) turb, (L) other Deep Shallow

Power: (A) diesel, (B) elec, (C) gas, (D) gasoline, (E) hand, (F) gas, (G) wind, (H) H.P. Trans. or meter no.

Descrip. MP ft above LSD, Alt. MP

Alt. LSD: 11720 Accuracy: 4

Water Level: 8 ft above below MP; Ft below LSD 8 Accuracy: 4

Date meas: 9.63 Yield: 30 gpm 30 Method determined 4

Drawdown: 200 ft 200 Accuracy: 3 Pumping period 4 hrs 4

QUALITY OF WATER DATA: Iron Sulfate Chloride Hard.

Sp. Conduct K x 10⁶ Temp. Date sampled

Taste, color, etc.

Well No.

37. 29. 35 000

Appel

1988 OMW
Inventory, 1 Suite

224814

Latitude-longitude
d m s S d m s

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD

Physiographic
Province:

22

Section:

B

Drainage
Basin:

284

Subbasin:

Topo of well site: (D) depression, stream channel, dunes, flat, hilltop, sink, swamp, (C) (K) (P) (H) (K) (L) (S) (P) (S) (T) (U) (V) offshore, pediment, hillside, terrace, undulating, valley flat

MAJOR
AQUIFER:

system

series

22

aquifer, formation, group

Aquifer

Thickness:

Lithology:

287

Length of
well open to:

ft

287

Depth to
top of:

ft

51

MINOR
AQUIFER:

system

series

44

aquifer, formation, group

Aquifer

Thickness:

Lithology:

44

Length of
well open to:

ft

44

Depth to
top of:

ft

44

Intervals

Screened:

Depth to
consolidated rock:

ft

40

Source of data:

Depth to
basement:

ft

51

Source of data:

Surficial
material:

Coefficient

spd/ft

70

Infiltration
characteristics:

Coefficient

Storage:

Perm:

gpd/ft²; Spec cap:

15

gpm/ft; Number of geologic cards:

Log

own clay

ay clay

own clay

ay sand, clay & Rocks

ed granite

ink & gray granite

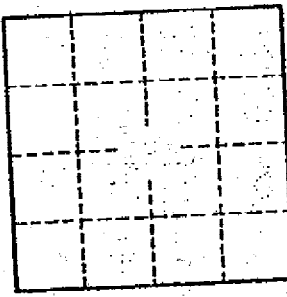
gray granite

ink & gray granite

red granite

LOCATED BY

1. ☐ Address Verification
2. ☐ Name on Mailbox
3. ☐ Lot Record
4. ☐ Plat Book
5. ☐ Info. From Owner
6. ☐ Info. From Neighbor
7. ☒ Other City
- ☐ Can't Locate State Why



Well No.

CPO 937-142

224815 City of Foley
1988 OMW
Inventory, 1 Suite

FORM 9-1642
(1-68)

Well No.

37-29-35 a,b
37-29-35 a,b,b,c,c

U. S. DEPT. OF THE INTERIOR

GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

elev. 1133 ± 5

155-B

224815, Test Hole
#4

MASTER CARD

Record by C. Cox Source of data driller Date 11/2/72 Map FOLEY 7 1/2

State Minnesota County (or town) Benton Co. 0.5

Latitude: 45° 39' 31" N Longitude: 093° 54' 48" W Sequential number: 1

Lat-long accuracy: 2' 03.7" S. 29.5" Sec 35. NW 1/4 SW 1/4 NE 1/4 4TH

Local well number: 037 N 29 W 35 ACB Other number: Test #4

Local use: FOLEY Owner or name: Village of Foley Address: Foley Minn

Ownership: County, Fed Gov't, City, Corp or Co, Private, State Agency, Water Dist M

Use of water: (A) Air cond, Bottling, Comm, Dewater, Power, Fire, Dom, Irr, Med, Ind, P S, Rec, (B) Stock, Instit, Unused, Repressure, Recharge, Desal-P S, Desal-other, Other V

Use of well: (A) Anode, Drain, Seismic, Heat Res, Obs, Oil-gas, Recharge, Test, Unused, Withdraw, Waste, Destroyed. T

DATA AVAILABLE: Well data 5 Freq. W/L meas.: N Field aquifer char. 72

Hyd. lab. data: 73

Qual. water data; type: 74

Freq. sampling: 75 Pumpage inventory: no period: 76

Aperture cards: 77

Log data: 78

WELL-DESCRIPTION CARD

TEST HOLE #4 So. Side

SAME AS ON MASTER CARD Depth well: 64 ft Meas. 3

Depth cased; (first perf.): 33 ft Casing type: 1; Diam. 1 in

Finish: (C) porous concrete, (F) gravel w. (G) gravel w. (H) horiz. (P) perf., (S) screen, (T) ad. pt., (W) shored, (X) open hole, (Z) other

Method: (A) air bored, (B) cable, (C) dug, (D) hyd jetted, (E) air percussion, (F) rotary, (G) reverse, (H) trenching, (I) driven, (J) drive wash, (K) other

Date Drilled: 33 Pump intake setting: 33 ft

Driller: 34

Lift (type): (A) air, (B) bucket, (C) cent, (D) jet, (E) multiple, (F) multiple, (G) none, (H) piston, (I) rot, (J) submerg, (K) turb, (L) other

Power (type): (A) diesel, (B) elec, (C) gas, (D) gasoline, (E) hand, (F) gas, (G) wind, (H) H.P.

Descript. MP 35 ft above LSD, Alt. MP 36

Alt. LSD: 37 Accuracy: 4

Water Level: 38 ft above MP; 39 ft below LSD Accuracy: 40

Date meas: 41 Yield: 42 gpm Method determined 43

Drawdown: 44 ft Accuracy: 45 Pumping period: 46 hrs

QUALITY OF WATER DATA: Iron 47 Sulfate 48 Chloride 49 Hard. 50

Sp. Conduct 51 K x 10⁶ 52 Temp. 53 Date sampled 54

Taste, color, etc. 55

Well No. 37-29-35 a,b

Well No.

37.29.35 acd

Appendix VII - City of Foley

1988 OMW
Inventory, 1 Suite

224815

Latitude-longitude

N
S

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD

Physiographic
Province:

Section:

12

2

Drainage
Basin:

284

Subbasin:

26

Topo of well site: (D) depression, stream channel, dunes, flat, hilltop, sink, swamp,
(P) offshore, pediment, hillside, terrace, undulating, valley flat

MAJOR
AQUIFER:

system

series

Origin:

aquifer, formation, group

Aquifer
Thickness:

Lithology:

Length of
well open to:

ft

Depth to
top of:

ft

MINOR
AQUIFER:

system

series

Origin:

aquifer, formation, group

Aquifer
Thickness:

Lithology:

Length of
well open to:

ft

Depth to
top of:

ft

Intervals

Screened:

Depth to
consolidated rock:

ft

Source of data:

Depth to
basement:

ft

Source of data:

Surficial
material:Infiltration
characteristics:Coefficient
Trans:

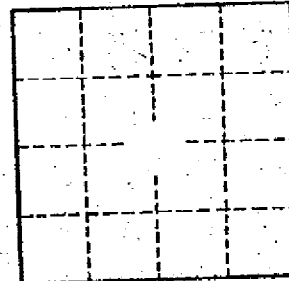
gpd/ft

Coefficient
Storage:Coefficient
Perm:gpd/ft²; Spec cap:

gpd/ft; Number of geologic cards:

1/2
brown clay
gray clay
gray sand & water
brown clay
gray clay
granite

0. T.
18 18
23 5
2.7 4
48 21
40-60 12
60 64 4 T/1073



Well No.

37.29.35 acd

LOCATED BY

1. ☐ Address Verification
2. ☐ Name on Mailbox
3. ☐ Lot Block
4. ☐ Plat Book
5. ☐ Info. From Owner
6. ☐ Info. From Neighbor
7. ☒ Other city
- ☐ Can't Locate State Why

GPO 937-142

Foley

5/29/18

to

7/15/81

MINNESOTA STATE BOARD OF HEALTH
Division of Sanitation
REPORT ON WATER SUPPLY FOR THE VILLAGE OF
FOLEY
May 29, 1918.

The village of Foley has no municipal water supply system.

The construction of such a system to furnish water for fire protection and domestic purposes is contemplated. It is proposed to obtain the supply of water from a drilled well.

Recommendations

The well pumping apparatus and storage reservoir should be designed and constructed in accordance with the requirements of the State Board of Health on this subject. A copy of these requirements is appended to this report.

Conclusion

The field survey showed that there was no existing water supply system, but that one was to be constructed in the near future. The above recommendations should be complied with in order that the supply of water of a safe sanitary quality can be obtained.

Engineer

Approved

Hawthorne
Director

MINNESOTA DEPARTMENT OF HEALTH
Division of Sanitation

Report on Water Supply at Foley, Minn.
August 12, 1929

This water supply is obtained from a drilled well 85 feet deep which A
is located one block north of the center of the village. A stratigraphic study of the soil showed that clay was encountered throughout the entire depth of the well, with a granite ledge at the bottom. The normal water level in the well is 18 feet below the ground surface. The well is cased with 10-inch casing of iron pipe throughout its entire depth. The casing extends to a point about 6 inches above the floor of the pump station which is about 6 feet below the adjacent ground level.

Water is drawn from the well by means of a gas engine and a suction pump. The working capacity of the pump is 75 gallons per minute. Cooling water is not discharged into the well, but into a drain which runs to the sewer. A sump has been constructed in the floor, about four feet in diameter and four feet in depth, from which water is pumped by means of a hand pump to the same drain which carries the cooling water. The well casing is attached to the pump head by a water-tight connection. The pump discharges into the distribution system and an elevated tank. The elevated tank is constructed of steel and has a capacity of 60,000 gallons. The distribution system consists of approximately 10,000 feet of water mains which distribute to 96 service connections and 30 fire hydrants. The average daily consumption of water is 25,000 gallons which is used by about 400 people.

This pump station is located entirely below ground level, the floor being about 6 feet below the surface. Experience has demonstrated that pump pits and subground level pump rooms are not as safe as those located entirely above ground on account of the difficulty of maintaining them in a dry sanitary condition at all times. Such pits or pump rooms require special drainage which often gets out of order and may become receptacles for the accumulation

MINNESOTA DEPARTMENT OF HEALTH
Division of Sanitation

Report on the Water Supply of
Foley, Minnesota
June 24, 1940

This investigation showed that this water supply complied with the water supply standards of this Department except for the following sanitary defects:

1. In the basement of the pumphouse there is a floor drain located 10 feet from the well, and this drain discharges directly to a sewer. The floor drain in the fire-engine room is approximately 30 feet from the well, and the toilet in the ladies' restroom is approximately 20 feet east of the well. There should be a distance of at least 50 feet between a well and any source of contamination such as sewers, cesspools, privies, etc., in order to adequately protect the water supply from these sources of contamination.
2. The opening in the baseplate of the pump through which the draw-down gauge extends is not water-tight.
3. There is one blow-off to a sewer manhole at a depth of 8 to 9 feet. This creates a serious cross connection because if the sewer should become clogged and the sewage backs up, contamination could be drawn into the water supply.
4. All of the water and sewer services and some of the water main and sewer pipe are laid in the same trench. There also are water and sewer crossings where adequate protection against leakage has not been provided. Where water and sewer pipe cross or are laid close together, settlement of the ground may cause both pipes to leak at the same point, and should a partial vacuum then occur in the water pipe, contamination would be drawn into the water supply.

-2-

5. The water supply at the Farmers Cooperative Creamery is cross- B
connected to the municipal supply. Regulation 201 of the State Board of Health states that there shall be no physical connection between water supply systems that are safe for domestic use and those that are unsafe for domestic use. The creamery supply is not considered safe.

6. Two open oil drums are stored near the pumphouse, and the ground around the drums is saturated with oil.

7. It was observed during the course of the investigation that there were plumbing fixtures which were designed and installed in such a way that they constitute a hazard to the water supply.

Water supply outlets which can be submerged will permit water to be back-siphoned or drained into the water-piping system. It is known that partial vacuums occur occasionally on water distribution systems when the system is drained and the normal pressure is relieved by breaks in the mains, by fire engine pumps, by opening the system for repairs, etc. When a partial vacuum is produced on the water piping system, plumbing which is unsatisfactory either from the standpoint of design or installation, or both, may be a means whereby contamination may be drawn into the water distribution system.

It was not possible during this investigation, because of the limited time, to make a complete survey of all the plumbing that is connected to the water system. It is very likely, however, that there are installations of faulty plumbing and cross connections caused by faulty plumbing other than those observed at the time of the investigation.

Analytical Data: (See attached sheet)

Samples No. 65098, 65099 and 65100 represent water collected from the pumphouse and points on the distribution system. The bacteriological examination of these samples showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coli-aerogenes group were not found in 100 ml. portions of the samples examined.

MINNESOTA DEPARTMENT OF HEALTH
Division of SanitationReport on Investigation of Water Supply
Foley, Minnesota
May 1, 1943

The water supply for this village is obtained from a drilled well. The water is pumped directly into the distribution system for public consumption without treatment while the overflow collects in an elevated steel tank.

Location of Source

The well is located in the central part of the village on level ground with fair surface drainage away from it. The surface earth formation is clay. The floor drains and a toilet which are directly connected with the sanitary sewer are located thirty feet or less from the well. This distance is considered not sufficient to remove contamination from the water by soil filtration before it reaches the well. There is a pit located less than six feet from the well which is drained to the sanitary sewer; waste water can accumulate and sewage can back up into this pit and reach the well without adequate filtration. This site is considered unsatisfactory for the foregoing reasons.

Well, Pump and Pumphouse

C The well is drilled to a depth of 59 feet and is cased with ten-inch iron pipe throughout its entire depth. A well screen is provided. The casing extends to a point 24 inches above the floor of the pumproom and is attached to the pumphead with a suitable water-tight connection. A stratigraphic section of this well shows the existence of clay throughout its entire depth. The normal water level in the well is fourteen feet below ground surface with a drawdown of 27 feet.

Water is drawn from the well by means of a vertical turbine pump having a rated capacity of 275 gallons per minute. The pumphead is set on a concrete pedestal 24 inches above the pumproom floor. The discharge pipe enters the ground through the basement floor and the gate valve is located in the basement where it is subject to flooding. Water lubrication is used for bearings located

- 2 -

inside the well casing. The opening in the base plate of the pump through which the drawdown gauge extends is not water-tight, thus permitting waste water, oil and other forms of contamination to enter the well. The vent on the discharge air relief is not suitably screened and no vent is provided for the well. The lack of a well vent may cause leaks to develop under the pumpbase. The pump was installed in 1936.

The pumphouse is constructed as a part of a municipal building housing a comfort station, library, lock-up and fire hall. The floor, which is constructed of concrete is about two inches above the adjacent ground surface. The door, which opens inward, might hamper rapid drainage if the pumphouse became flooded. The basement of the pumphouse which is eight feet deep and extends to a point six feet from the well, is connected to the sanitary sewer by means of a floor drain located seven feet from the well. Waste water from the pump lubricating system is also discharged to this drain. A toilet, which is located on the ground floor, is twenty feet from the well, and a floor drain in the fire station which is also connected with the sewer, is located thirty feet from the well. The pumphouse is not kept locked.

Storage

The water is stored in an elevated steel tank which is located adjacent to the well and which has a capacity of 60,000 gallons. The manhole cover is flush with the tank roof and is not water-tight. It was stated that the tank was last cleaned and painted on the inside in 1942.

Distribution System

The distribution system consists of three miles of water main which distributes water to 108 service connections and 26 fire hydrants. The average daily consumption of water is 40,000 gallons.

Some of the water mains and sewers in the streets, as well as house services and building sewers, are laid in the same trenches without adequate protection against leakage. There are places where water mains cross under

5773 8-6-41 5M 9189

MINNESOTA DEPARTMENT OF HEALTH

DIVISION OF SANITATION

Analytical Examination of Water

NO	TOWN, ETC.	MAP LOCATION	SPECIFIC LOCATION	SOURCE
75148	Foley	Pumpstation	Pumproom tap	Public supply
75149	"	Public School	Lavatory "	" "
75150	"	Jakeville Service Station	" "	" "

Specimen Number	75148	75149	75150
Station Number			
Collected by	ACL	ACL	ACL
Date Collected	5/1/43	5/1/43	5/1/43
BACTERIAL: Exam. by	DMT	DMT	DMT
Bacteria per c.c. 37° C. 24 hours			
Coli-aerogenes group	0	0	0
PHYSICAL: Exam. by			
Turbidity			
Color			
CHEMICAL: Exam. by (parts per million except as noted)			
Total hardness	230.		
Alkalinity	150.		
pH value	8.0		
Iron	0.05		
Manganese	0.12		
Chlorides	36.		
Residual Chlorine			
Sulphates	24.		
Fluorides	0.3		
Dissolved Oxygen			
Biochemical Oxygen Demand			
Total solids			
Total suspended solids			
Settleable solids c.c. per liter			

MINNESOTA DEPARTMENT OF HEALTH
Division of Municipal Water Supply

Report on Water Supply of
Foley, Minnesota
December 16, 1947

The water supply for the village of Foley is obtained from a drilled well. The water is pumped directly into the distribution system for public consumption without treatment while the overflow collects in an elevated steel tank.

Previous Investigations:

Data relative to this supply are contained in the reports of previous investigations made by this Division. The last investigation was undertaken on May 1, 1943, at which time the sanitary aspect of the supply was considered unsatisfactory. The report of that date contains recommendations for correcting the unsatisfactory condition. These recommendations have not been entirely complied with.

Since the last investigation, the well at the creamery has been B abandoned and the creamery's entire supply is obtained from the municipal supply. The elevated steel tank was painted and cleaned during the summer of 1947.

Analytical Data: (See attached sheet)

Samples Nos. 89881, 89882, 89883 and 89884 represent water collected from the well and from various points on the distribution system. The bacteriological examination of these samples showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in 100 ml. portions of the samples examined. The absence of indications of contamination in the water does not mean that the supply is safe as the field survey showed avenues through which contamination can enter the supply at any time.

The physical examination of sample No. 89881 showed a water with a trace of turbidity and very low color. The chemical examination showed a hard water with a trace of iron content.

7689 10-1-47 5M

MINNESOTA DEPARTMENT OF HEALTH

SECTION OF ENVIRONMENTAL SANITATION

Analytical Examination of Water

NO.	TOWN, ETC.	MAP LOCATION	SPECIFIC LOCATION	SOURCE
89881	Foley	Benton Co.	Pumphouse tap	Well (drilled) C
82	"	" "	Dr. Donaldson's Office, Public supply	
89883	"	" "	lav. tap	
89884	"	" "	Phillip Sta., nose tap	" "
	"	" "	Catholic church, lav. tap	" "

Specimen Number	89881	89882	89883	89884		
Station Number						
Collected by	FCL	FCL	FCL	FCL		
Date Collected	12/16/47	12/16/47	12/16/47	12/16/47		
Date Rec'd by Lab.	12/17/47	12/17/47	12/17/47	12/17/47		
BACTERIAL: Exam. by	HGO	HGO	HGO	HGO		
Bacteria per c.c. 37° C. 24 hours						
Coliform group } 100 ml.						
organisms } M.P.N. per 100 ml.	0	0	0	0		
PHYSICAL: Exam. by						
Turbidity	0.1					
Color	7.					
Total Solids						
Total suspended solids						
Settleable solids c.c. per liter						
CHEMICAL: Exam. by						
(parts per million except as noted)						
Total hardness	270.					
Alkalinity (M. O.)	210.					
pH value	8.1					
Iron	0.02					
Manganese	0					
Chlorides	17.					
Residual Chlorine						
Sulphates	5.6					
Fluorides	0.3					
Dissolved Oxygen						
Biochemical Oxygen Demand } Five-day						
Nitrate Nitrogen	0.05					

MINNESOTA DEPARTMENT OF HEALTH
Division of Municipal Water Supply

Report on Water Supply of
Foley, Minnesota
September 13, 1948

Date of Last Investigation: December 16, 1947

Changes Since Last Investigation: None

Analytical Data: (See attached sheet)

Sample No. 93181 represents water collected from the well. The bacteriological examination of this sample showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in 100 ml. portions of the samples examined. The absence of indications of contamination in the water does not mean that the supply is safe as the field survey showed avenues through which contamination can enter the supply at any time.

Samples Nos. 93182 and 93183 represent water collected from various points on the distribution system. The bacteriological examination of these samples showed indications of contamination in the water as evidenced by the fact that organisms of the coliform group were found in 100 ml. portions of the samples examined.

The physical examination of sample No. 93181 showed a water with very low turbidity and no color. The chemical examination showed a hard water with a trace of iron content.

Recommendations

1. All underground sewers, toilets, and floor drains connected to sewers within 50 feet from the well should be moved to distances further than 50 feet from the well, unless additional safeguard is provided. (See Paragraph 403C(b), Section IV of the Manual of Water Supply Sanitation.) The following safeguards may be used if necessary:

a. The toilet and toilet waste pipes should be raised above the floor to a distance of 50 feet from the well.

b. All underground sewers between 40 and 50 feet from the well should be constructed of extra heavy cast-iron pipe with water-tight joints.

7952 5-19 48 5M

MINNESOTA DEPARTMENT OF HEALTH

SECTION OF ENVIRONMENTAL SANITATION

Analytical Examination of Water

NO.	TOWN, ETC.	MAP LOCATION	SPECIFIC LOCATION	SOURCE
93181	Foley	Pumphouse	Discharge tap	Well C
82	"	Dr. Donaldson's office	Lab. tap	Distribution system
93183	"	School	Lav. tap	" "

Specimen Number	93181	93182	93183
Station Number			
Collected by	WRL-AJS	WRL-AJS	WRL-AJS
Date Collected	9-13-48	9-13-48	9-13-48
Date Rec'd by Lab.	9-14-48	9-14-48	9-14-48
BACTERIAL: Exam. by	HGO	HGO	HGO
Bacteria per c.c. 37° C. 24 hours			
Coliform group } 100 ml.			
organisms } M.P.N. per 100 ml.	0	2.6	1.1
PHYSICAL: Exam. by			
Turbidity	.45		
Color	0		
Total Solids			
Total suspended solids			
Settleable solids c.c. per liter			
CHEMICAL: Exam. by (parts per million except as noted)			
Total hardness	240.		
Alkalinity (M. O.)	210.		
pH value	7.7		
Iron	.002		
Manganese	.13		
Chlorides	16.		
Residual Chlorine	40.		
Sulphates	.28		
Fluorides			
Dissolved Oxygen			
Biochemical Oxygen Demand } Five-day			
Nitrate Nitrogen	< 0.1		

MINNESOTA DEPARTMENT OF HEALTH
Division of Municipal Water Supply

Report on Water Supply of
Foley, Minnesota
November 16, 1949

1. Date of Last Investigation - September 13, 1948. .
2. Rating at Last Investigation - 66.
3. Improvements Since Last Investigation - A new well has been installed. D

Detailed information on the well was not available at the time of this investigation.

4. Analytical Data - (See attached sheet.)

Samples Nos. 275, 276 and 277 represent water collected from the new well and from various points on the distribution system. The bacteriological examination of these samples showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in 100 ml. portions of the samples examined.

5. Recommendations -

a. The toilet and all buried sewer lines that are within fifty feet of the well in the fire station should be removed to that distance or reconstructed according to the following schedule.

No sewers, toilets, or floor drains should be located closer than thirty feet to the well. Buried sewer lines more than thirty feet but less than fifty feet from the well should be installed in accordance with the details in Paragraph 408C(b), Section IV of the Manual of Water Supply Sanitation.

The basement floor drain should be disconnected from the sewer at a point at least fifty feet from the well. Waste water should be removed from this area by an automatic electric sump pump discharging to one of the relocated floor drains via a one-way gap delivery arrangement.

34 8-11-49 5M

MINNESOTA DEPARTMENT OF HEALTH

SECTION OF ENVIRONMENTAL SANITATION

Analytical Examination of..... Water

NO.	TOWN, ETC.	MAP LOCATION	SPECIFIC LOCATION	SOURCE
275	Foley	Pump house	Discharge tap	New well D
"	"	Tydol Station	Garage tap	Distribution system
277	"	School	Lav. tap	" "

Specimen Number	275	276	277			
Station Number						
Collected by	WRL-AJS	WRL-AJS	WRL-AJS			
Date Collected	11-16-49	11-16-49	11-16-49			
Date Rec'd by Lab.	11-17-49	11-17-49	11-17-49			
BACTERIAL: Exam. by	HGO	HGO	HGO			
Bacteria per c.c. 37° C. 24 hours						
Coliform group } 100 ml.			Negative			
organisms } M.P.N. per 100 ml.	0	0				
PHYSICAL: Exam. by						
Turbidity	0.7					
Color	2.					
Total Solids						
Total suspended solids						
Settleable solids c.c. per liter						
CHEMICAL: Exam. by						
(parts per million except as noted)						
Total hardness	250.					
Alkalinity (Phen.)	1. *					
pH value	7.9					
Iron	.02					
Manganese	.13					
Chlorides	16.					
Residual Chlorine						
Sulphates	48.					
Fluorides	.43					
Dissolved Oxygen						
Biochemical Oxygen Demand						
	Five-day					
Nitrate Nitrogen	< 0.1					
*Alkalinity (M.O.)	220.					

(A)

MINNESOTA DEPARTMENT OF HEALTH
District No. 8
Little Falls, Minnesota

Report on Water Supply of
Foley, Minnesota
October 30, 1950

1. Date of Last Investigation - November 16, 1949
2. Rating at Last Investigation - 75
3. Improvements Since Last Investigation -

a. The toilet in the building has been removed. However, the direct connection of the basement floor drain to the sanitary sewer has not been eliminated.

b. The new well and pumphouse have been completed. Unfortunately, the pumphouse drain line was constructed to discharge to a gravel pocket located less than 30 feet (ten feet) from the new well.

It was stated that the new drilled well is 67 feet deep and D cased with 12-inch pipe. A 210 gpm capacity vertical turbine pump has been installed over the well. The static level is 45 feet below grade. as far as could be determined, this well is constructed in accordance with the standards of this Department with the above noted exception.

4. Analytical Data - (See attached sheet.)

Samples Nos. 5087, 5088, 5089 and 5090 represent water collected from the wells and from various points on the distribution system. The bacteriological examination of these samples showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in 100 ml. portions of the samples examined.

5. Recommendations -

a. All buried sewer lines that are within fifty feet of the old well in the fire station should be removed to that distance or reconstructed according to the following schedule.

MINNESOTA DEPARTMENT OF HEALTH

SECTION OF ENVIRONMENTAL SANITATION

Analytical Examination of Water

NO.	TOWN, ETC.	MAP LOCATION	SPECIFIC LOCATION	SOURCE
5087	Foley	Pumphouse	Discharge tap	New well D
5088	"	Pumproom	" "	Old well C
5089	"	Public School	Lav. tap - basement	Dist. system
5090	"	Tydol Station	Hose bib (garage)	" "

Specimen Number	5087	5088	5089	5099		
Station Number						
Collected by	AJS	AJS	AJS	AJS		
Date Collected	10/30/50	10/30/50	10/30/50	10/30/50		
Date Rec'd by Lab.	10/31/50	10/31/50	10/31/50	10/31/50		
BACTERIAL: Exam. by	HGO	HGO	HGO	HGO		
Bacteria per c.c. 37° C. 24 hours						
Coliform group } 100 ml.						
organisms } M.P.N. per 100 ml.	0	0	0	0		
PHYSICAL: Exam. by						
Turbidity	0.5					
Color	20					
Total Solids						
Total suspended solids						
Settleable solids c.c. per liter						
CHEMICAL: Exam. by (parts per million except as noted)						
Total hardness	270.					
Alkalinity	210.					
pH value	7.3					
Iron	.054					
Manganese	.007					
Chlorides	15.					
Residual Chlorine						
Sulphates	51.					
Fluorides	.01					
Dissolved Oxygen						
Biochemical Oxygen Demand } Five-day						
Nitrate Nitrogen	<.1					

MINNESOTA DEPARTMENT OF HEALTH
District No. 8
Little Falls, Minnesota

Report on Water Supply of
Foley, Minnesota
October 31, 1951

1. Date of Last Investigation - October 30, 1950
2. Rating at Last Investigation - 73
3. Improvements Since Last Investigation -
 - a. The cast-iron drain line from the new pumphouse has been extended to a point approximately 50 feet from the well and discharges to a gravel pocket.
 - b. A gate valve has been installed in discharge pipe from the old well above the pumproom floor.
 - c. The defective nipple in the base plate of the pump for the old well has been eliminated.
 - d. The inside of the elevated tank has been cleaned and painted.
4. Analytical Data - (See attached sheet.)

Samples Nos. 623, 624 and 625 represent water collected from the wells and from various points on the distribution system. The good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in 100 ml. portions of the samples examined.
5. Recommendations -
 - a. All buried sewer lines that are within fifty feet of the old well in the fire station should be removed to that distance or reconstructed according to the following schedule.

No sewers or floor drains connected directly to storm or sanitary sewers should be located closer than thirty feet to the well. Buried sewer lines more than thirty feet but less than fifty

8-26-52

MINNESOTA DEPARTMENT OF HEALTH
District No. 3
Little Falls, Minnesota

Report on Water Supply of
Foley, Minnesota
July 29, 1952

1. Date of Last Investigation - October 31, 1951
2. Rating at Last Investigation - 77
3. Improvements Since Last Investigation - None
4. Analytical Data - (See attached sheet.)

Samples Nos. 5034, 5035, 5036 and 5037 represent water collected from the wells and from various points on the distribution system. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in 100 ml. portions of the samples examined.

5. Recommendations -

a. All buried sewer lines that are within fifty feet of the old well in the fire station should be removed to that distance or reconstructed according to the following schedule.

No sewers or floor drains connected directly to storm or sanitary sewers should be located closer than thirty feet to the well. Buried sewer lines more than thirty feet but less than fifty feet from the well should be installed in accordance with the details in Paragraph 408C(b), Section IV of the Manual of Water Supply Sanitation.

The basement floor drain should be disconnected from the sewer at a point at least fifty feet from the well. Waste water should be removed from this area by an automatic electric sump pump discharging to one of the relocated floor drains via a one-way gap delivery arrangement.

b. The casing vent on the new well should be provided with a suitable hood.

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Not sent out

Report on Water Supply of
Foley, Minnesota
October 7, 1953

1. Date of Last Investigation - July 29, 1952
2. Rating at Last Investigation - 78
3. Changes Since Last Investigation -
 - a. A suitable hood and screen have been provided for the new well casing vent.
 - b. A sump pump has been provided to replace the floor drain at the old well.

The connection to the floor drain to the sewer has been broken at the man-hole located in the fire barn; however, the piping arrangement is not entirely satisfactory for the removal of the waste water.

4. Analytical Data - (See attached sheet)

Samples Nos. 2008 through 2011 represent water collected from the wells and from various points on the distribution system. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in portions of the samples examined.

5. Recommendations -

- a. Buried sewer lines located more than 30 feet but less than 50 feet from the well should be reconstructed in accordance with the details in paragraph 408C (b), Section IV of the Manual of Water Supply Sanitation.

- b. The piping arrangement for the sump pump should be rearranged to discharge waste water to the sewer by means of an open-gap delivery arrangement to a floor drain or an open trapped receptacle. Buried drains receiving these wastes should be constructed as indicated in "a" above.

- c. A casing vent should be provided for the old well. It should extend at least 24 inches above the floor and should be provided with a goose-neck fitting or with a fine mesh screen and suitable hood.

7-13-54

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Water Supply of
Foley, Minnesota
October 7, 1953 through April 5, 1954

1. Date of Last Investigation - July 29, 1952
2. Rating at Last Investigation - 78
3. Changes since Last Investigation -
 - a. A suitable hood and screen have been provided for the new well casing vent.
 - b. A sump pump has been installed to replace the floor drain at the old well, and the floor drain connection to the sewer has been broken at the manhole located in the fire barn, a distance of 30 feet from the well. The sump pump discharges to the sewer through a one-way gap to a trapped receptacle. Care should be taken to insure that no arrangements are made to discharge waste water to the sump.
4. Analytical Data (See attached sheet)

Samples Nos. 2006 through 2011 and 4547 through 4550 represent water collected from the wells and from various points on the distribution system, on October 7, 1953 and April 5, 1954, respectively. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in the portions of the samples examined.
5. Recommendations -
 - a. Buried sewer lines located more than 30 feet but less than 50 feet from the well should be reconstructed in accordance with the details outlined in paragraph 408C (b), Section IV of the Manual of Water Supply Sanitation.
 - b. A casing vent should be provided for the old well. It should extend at least 24 inches above the floor and should be provided with a goose-neck fitting or with a fine mesh screen and suitable hood.

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Water Supply of
Foley, Minnesota
February 2, 1955

1. Date of Last Investigation - April 5, 1954
2. Rating at Last Investigation - 87
3. Changes since Last Investigation - None
4. Analytical Data (See attached sheet)

Samples Nos. 9380 through 9383 represent water collected from the wells and from various points on the distribution system. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in the portions of the samples examined.

5. Recommendations -

a. When the opportunity presents itself, buried sewer lines located more than 30 feet but less than 50 feet from the well should be reconstructed in accordance with the details outlined in paragraph 408C (b), Section IV of the Manual of Water Supply Sanitation.

b. A casing vent should be provided for the old well. It should extend at least 24 inches above the floor and should be provided with a goose-neck fitting or with a fine mesh screen and suitable hood.

c. The manhole opening on the elevated tank should be fitted with a frame having edges raised at least six inches above the adjacent roof surface and an overlapping cover with edges projecting downward at least two inches should be provided and kept locked in place.

d. Hereafter where new water mains cross below sewers or less than six feet above them, all the joints on the water main lying within 10 feet of the sewer, measured horizontally, should be provided with bell joint clamps with rubber

4-20-56

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Water Supply of
Foley, Minnesota
March 21, 1956

1. Date of Last Investigation - February 2, 1955
2. Rating at Last Investigation - 87
3. Changes since Last Investigation -

Approximately 350 feet of 1-inch water main with leaded joints have been laid. As far as could be determined, plans and specifications covering this work were not submitted in accordance with Regulation 200 of the State Board of Health.

4. Analytical Data (See attached sheet)

Samples Nos. 5286 through 5289 represent water collected from the wells and from various points on the distribution system. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in the portions of the samples examined.

5. Recommendations -

a. When the opportunity presents itself, buried sewer lines of cast iron construction located more than 30 feet but less than 40 feet from the well should be reconstructed to provide extra protection for all joints. Slip-over sleeves 12 inches long, packed with mastic, or bell-joint clamps are satisfactory.

b. A casing vent should be provided for the old well. It should extend at least 24 inches above the floor and should be provided with a goose-neck fitting or with a fine mesh screen and suitable hood.

c. The manhole opening on the elevated tank should be fitted with a frame having edges raised at least six inches above the adjacent roof surface and an overlapping cover with edges projecting downward at least two inches should be provided.

d. Hereafter where new water mains cross below sewers or less than six feet above them, all the joints on the water main lying within 10 feet of the sewer, measured horizontally, should be provided with bell joint clamps with rubber gaskets in

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Water Supply of
Foley, Minnesota
January 30, 1957

1. Date of Last Investigation - March 21, 1956
2. Rating at Last Investigation - 87
3. Changes since Last Investigation -
 - a. The elevated tank manhole opening and cover have been satisfactorily reconstructed.
 - b. A casing vent has been installed at the old well.
 - c. Approximately two blocks of 4-inch water main of mechanical joint construction have been installed. Plans and specifications covering this work were not submitted in accordance with Regulation 200 of the State Board of Health.
4. Analytical Data (See attached sheet)

Samples Nos. 419 through 422 represent water collected from the wells and from various points on the distribution system. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in the portions of the samples examined.
5. Recommendations -
 - a. When the opportunity presents itself, buried sewer lines of cast iron construction located more than 30 feet but less than 40 feet from the old well should be reconstructed to provide extra protection for all joints. Slip-over sleeves 12 inches long, packed with mastic, or bell-joint clamps are satisfactory.
 - b. Hereafter where new water mains cross below sewers or less than six feet above them, all the joints on the water main lying within 10 feet of the sewer,

5-14-58

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Water Supply of
Foley, Minnesota
March 26, 1958

1. Date of Last Investigation - January 30, 1957
2. Rating at Last Investigation - 89
3. Changes since Last Investigation -

Approximately 400 feet of 4-inch water main of mechanical joint construction have been installed. As far as could be determined, plans and specifications covering this work were not submitted in accordance with Regulation 200 of the State Board of Health.

4. Analytical Data (See attached sheet)

Samples Nos. 5790 through 5792 represent water collected from the new well and from various points on the distribution system. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in the portions of the samples examined.

A partial chemical examination of Sample No. 5790 collected from the well showed the water to be very low in nitrate nitrogen and low in fluorides. The pH was 7.9 as compared to a computed pH of 7.6 based on the carbonate balance, indicating a non-corrosive water.

5. Recommendations -

- a. When the opportunity presents itself, buried sewer lines of cast iron construction located more than 30 feet but less than 40 feet from the old well should be reconstructed to provide extra protection for all joints. Slip-over sleeves 12 inches long, packed with mastic, or bell-joint clamps are satisfactory.

- b. For new construction, where water mains cross below sewers or less than six feet above them, all the joints on the water main lying within 10 feet of

MINNESOTA DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL SANITATION

Analytical Examination of _____ water

[illegible]

Specimen Number	5790	5791	5792
Station Number			
Collected by	JIS		
Date Collected	3-26-58		
Date Rec'd by Lab.	3-27-58		
BACTERIAL: Exam. by	0		
Bacteria per c.c. 37° C. 24 hours			
Coliform group	100 ml.		
organisms	M.P.N. per 100 ml.		
PHYSICAL: Exam. by			
Turbidity			
Color			
Total Solids			
Total suspended solids			
Settleable solids c.c. per liter			
CHEMICAL: Exam. by			
(parts per million except as noted)			
Total hardness			
Alkalinity	210.		
pH value	field 7.9		
Iron			
Manganese			
Chlorides			
Residual Chlorine			
Sulphates			
Fluorides	34		
Dissolved Oxygen			
Biochemical Oxygen Demand	five-day		
Nitrate Nitrogen	< 1.		
Ca	180.		
Mg	7.6		

6-29-59

Minnesota Department of Health
District VIII
Little Falls Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota
April 22, 1959

This water supply is obtained from two drilled wells. This water is pumped directly into the system and to an elevated steel tank.

Location of Source

The wells are located on Lots 3, 4, and 5 of Block 10 in the central part of the town. There is a buried sewer line located less than 40 feet from the old well.

Wells, Pumps and Pump Station

The wells are designated as the old drilled well and the new drilled well. Each well is cased with 12-inch pipe and provided with 10 feet of screen at the bottom of the well. The well depths are 58 feet and 67 feet respectively for the old and new wells. The static water level is 45 feet below the ground surface.

Water is drawn from the wells by means of vertical turbine pumps. The pump on the old well has a capacity of 190 gallons per minute, and the pump on the new well has a capacity of 210 gallons per minute.

The pump stations are located in a building which also houses the Village offices and garage. The floor drain from the new well pumphouse is constructed of iron pipe which discharges to a gravel pocket about 40 feet distant. Drainage from the old well pumphouse is provided by means of a sump pump. The sump pump discharges to the sewer through a one-way gap to a trapped receptacle.

MINNESOTA DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL SANITATION
ANALYTICAL DATA

Samples Collected By Eugene Jourdan

Field Number	Town, County, Etc.	Sampling Point and Source of Sample					
104	Foley	New well	Pump discharge tap	Drilled well			
105	"	Old well	"	"	"	"	
106	"	School	School, Lav. tap	Dist. system			
107	"	Pure Oil Station	Lav. tap	"	"		

D

C

D

C

Sample Number	104	105	106	107		
Date Collected	4/22/59					
Time Collected						
Temperature °F						
Date Received by Lab.						
BACTERIAL: Exam. by						
Bacteria per ml. 35° C. 24 hours						
*Coliform group } 100 ml.	0	0	0	0		
organisms } M.P.N. per 100 ml.						
PHYSICAL & CHEMICAL: Exam. by						
filterable solids ml. per liter						
Total Solids						
Total Volatile Matter						
Suspended Solids						
Suspended Volatile Matter						
Turbidity						
Color						
Total hardness as CaCO ₃						
Alkalinity as CaCO ₃						
pH value	8.0	8.2				
Iron						
Manganese						
Chlorides						
Residual Chlorine						
Sulphates						
Fluorides						
Dissolved Oxygen						
Biochemical Oxygen Demand } five-day						
Phosphorus						
Ammonia Nitrogen						
Organic Nitrogen						
Nitrite Nitrogen						
Nitrate Nitrogen						
* Membrane Filter Method						

* Results are in milligrams per liter except as noted.

ANALYTICAL DATA

Field Number	Town, County, Etc.	Sampling Point and Source of Sample
221	Foley	New well Pump discharge tap Drilled well
222	"	Old well " " " " "

* Results are in milligrams per liter except as noted.

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

3/14/60

Report on Investigation of Municipal Water Supply
Foley, Minnesota
January 27, 1960

Date of Last Investigation - April 22, 1959

Rating at Last Investigation - 89

Changes since Last Investigation - None

Analytical Data (see attached sheet)

Samples Nos. 32 through 34 represent water collected at the ^{new} well and from various points on the distribution system. The bacteriological examination of these samples showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in the 100 ml. samples examined.

Defects Remaining on the System -

1. There is a buried sewer located less than 50 feet from the old drilled well.
2. There are water mains and street sewers in the same trench.
3. There are water services and building sewers in the same trench.

Recommendations

1. When a favorable opportunity occurs, buried sewer lines of cast-iron construction located more than 30 feet but less than 40 feet from the old well should be reconstructed to provide extra protection for all joints. Slip-over sleeves 12 inches long, packed with mastic, or bell-joint clamps are satisfactory.

2. For new construction, where water mains cross below sewers or less than six feet above them, all the joints on the water main lying within 10 feet of the sewer, measured horizontally, should be provided with bell joint clamps with rubber gaskets in addition to the usual leaded joint. Consideration should be given to the provision of these additional safeguards on existing construction where water and sewer pipes are laid close together, whenever a favorable opportunity occurs.

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

2/15/61

Report on Municipal Water Supply
Foley, Minnesota
January 3, 1961

Date of Last Survey - January 27, 1960

Rating at Last Survey - 89

Changes since Last Survey -

A total of 375 service connections is reported.

Analytical Data (see attached sheet)

Samples Nos. 1-4 represent water collected from the wells and from various points on the distribution system. The bacteriological examination of these samples showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in the 100 ml. samples examined.

Defects Remaining on the System -

1. There is a buried sewer located less than 50 feet from the old drilled well.
2. There are water mains and street sewers as well as water services and building sewers laid in the same trenches.

Recommendations

1. When a favorable opportunity occurs, buried sewer lines of cast-iron construction located more than 30 feet but less than 40 feet from the old well should be reconstructed to provide extra protection for all joints. Bell-joint clamps with rubber gaskets, in addition to the usual leaded joint, are considered satisfactory.
2. For new construction, where water mains cross below sewers or less than six feet above them, all the joints on the water main lying within 10 feet of the sewer, measured horizontally, should be provided with bell joint clamps with rubber gaskets in addition to the usual leaded joint. Consideration should be given to the provision of these additional safeguards on existing construction where water and sewer pipes are laid close together, whenever a favorable opportunity occurs.
3. New water services and building sewers should be laid in separate trenches

3-26-62

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota
February 27, 1962

Date of last investigation - January 3, 1961

Rating at last investigation - 89

Changes since last investigation -

1. The elevated tank has been cleaned and painted.
2. Equipment for application of fluoride chemical has been installed and placed into operation. A positive displacement type diaphragm pump has been provided. The chemical (fluosilicic acid) is pumped from the chemical storage container to a small constant level tank installed to provide a physical break between the chemical container and the water supply. The chemical solution is re-pumped from the constant level tank to the well discharge pipe. Record is maintained of the quantity of water pumped and chemical used; however, periodic tests of the concentration of chemical present in the water are not carried out.
3. A fire hall was constructed in a new addition adjacent to the village hall and new well pumproom. Floor drains of cast-iron construction were installed to discharge to the sanitary sewer. These drains are located at least 40 feet from the new well and over 50 feet from the old well.
4. Sanitary facilities are proposed to be installed for the jail in the north-east portion of the village hall building. The fixtures will be located so that buried sewer lines of cast-iron construction will be at least 40 feet from the old well and more than 50 feet from the new well.

Analytical Data (see attached sheet)

Samples Nos. 55-58 represent water collected from the wells and from various points on the distribution system. The bacteriological examination of these samples showed the water to be of good sanitary quality as evidenced by the fact

MINNESOTA DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL SANITATION

ANALYTICAL DATA

Samples Collected By A. J. Starin

Field Number	Town, County, Etc.	Sampling Point and Source of Sample
8911	Foley	Pure Station lav. tap, dist. sys. (new well) D
55	"	Pumphouse disc. tap, old well
56	"	" " " new well
57	"	Court House lav. tap, dist. sys.
58	"	Pure Station lav. tap, dist. sys.

Sample Number	8911	55	56	57	58	
Date Collected	2/27/62					
Time Collected						
Temperature °F						
Date Received by Lab.	3/6/62					
BACTERIAL: Exam. by						
Bacteria per ml. 35° C. 24 hours						
Coliform group } 100 ml. *		0	0	0	0	
organisms } M.P.N. per 100 ml.						
*PHYSICAL & CHEMICAL: Exam. by						
leakable solids ml. per liter						
Total Solids						
Total Volatile Matter						
Suspended Solids						
Suspended Volatile Matter						
Turbidity	8.					
Color	5.					
Total hardness as CaCO ₃	320.					
Alkalinity as CaCO ₃	230.					
pH value (field)	8.2					
Iron	.05					
Manganese	.01					
Chlorides						
Residual Chlorine						
Sulphates	79.					
Fluorides	.44					
Dissolved Oxygen						
Biochemical Oxygen Demand } five-day						
Phosphorus						
Ammonia Nitrogen						
Nitric Nitrogen						
Nitrite Nitrogen						
Nitrate Nitrogen	less than 1.					
pH at stability (50°F.)	7.6					
Calcium	180.					
*Membrane filter						

* Results are in milligrams per liter except as noted.

12-10-64

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota
December 30, 1963 and November 9, 1964

Date of last investigation - February 27, 1962

Rating at last investigation - 89

Changes since last investigation -

1. The elevated tank has been cleaned.
2. Water main extensions consisting of approximately 1000 feet and 200 feet of 4-inch pipe of slip-joint and mechanical-joint construction, respectively, have been installed, including 3 fire hydrants. The hydrants drain to gravel pockets.
3. The fluoride feeder is not operated on a continuous basis. The feeder is reported to have been out of service since May 1964.
4. Difficulties are being experienced with tastes and particularly odors in the water. As far as could be determined, the physical quality of the water is affected by petroleum constituents which have in some manner entered the ground water formation from which the municipal supply is obtained.

Analytical Data (see attached sheet)

Samples Nos. 323-326 and 254-257 represent water collected from the wells and from various points on the distribution system on December 30, 1963, and November 9, 1964, respectively. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that organisms of the coliform group were not found in the 100 ml. samples examined.

Sample No. 1174 represents water collected from a point on the system on December 30, 1963. The chemical examination showed a fluoride content of 0.34 milligrams per liter which is below the range of 1.0-1.5 milligrams per liter recommended for the control of dental caries (tooth decay).

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota
September 10, 1965

The water supply is obtained from two drilled wells. The water is pumped to the distribution system and an elevated tank which rides on the system.

Location of Source

The wells are located on Lots Nos. 3, 4 and 5 of Block 10, original town, in the central part of the village. There is a buried sewer located less than 40 feet from the old well.

C & D

Wells, Pumps and Pump Station

The wells are designated as the old drilled well and the new drilled well. Each well is cased with 12-inch pipe and provided with 10 feet of screen at the bottom of the well. The well depths are 58 feet and 67 feet respectively for the old and new wells. The static water level is 45 feet below the ground surface.

Water is drawn from the wells by means of vertical turbine pumps. The pump on the old well has a capacity of 190 gallons per minute, and the pump on the new well has a capacity of 210 gallons per minute.

The pump stations are located in a building which also houses the village offices, garage and fire station. The floor drain from the new well pumphouse is of cast-iron construction and discharges to a gravel pocket located approximately 40 feet from the well. The floor drainage from the old well pumphouse is discharged to a sump and the waste water is then pumped to the sanitary sewer through a one-way gap to a trapped receptacle located at least 30 feet from the well.

Distribution System

The distribution system consists of approximately 45 blocks of principally

MINNESOTA DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
ANALYTICAL DATA

Samples Collected By A. J. Starin

Field Number	Town, County, Etc.	Sampling Point and Source of Sample
610 ^a	Foley	Pumphouse disch. tap, old well C
217 ^b	"	" " " old well
218 ^c	"	" " " new well
219 ^d	"	Court House lav. tap, dist. sys.
220 ^e	"	Brenny Shell Sta. lav. tap, dist. sys.
^f	C	

Sample Number	610 ^a	217 ^b	218 ^c	219 ^d	220 ^e	^f
Date Collected	10-10-65					
Time Collected						
Temperature °F						
Date Received by Lab.	9-20-65					
BACTERIAL: Exam. by						
Bacteria per ml. 35° C. 24 hours						
Coliform group } 100 ml. MF		0	0	0	0	
organisms } M.P.N. per 100 ml.						
* PHYSICAL & CHEMICAL: Exam. by						
leakable solids ml. per liter						
Total Solids						
Total Volatile Matter						
Suspended Solids						
Suspended Volatile Matter						
Turbidity						
Color						
Total hardness as CaCO ₃	490.					
Alkalinity as CaCO ₃	340.					
pH value						
Iron	0.16					
Manganese	0.25					
Chlorides						
Residual Chlorine						
Sulphates	110.					
Fluorides	0.34					
Dissolved Oxygen						
Biochemical Oxygen Demand } five-day						
Phosphorus						
Ammonia Nitrogen						
Organic Nitrogen						
Nitrite Nitrogen						
Nitrate Nitrogen	less than 1.					
Surfactant as ABS						
Calcium as CaCO ₃						

* Results are in milligrams per liter except as noted.

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota
March 16, 1966

Date of last investigation - September 10, 1965

Rating at last investigation - 86

Changes since last investigation

No physical changes have been made. The fluoridation equipment continues to be out of service.

Analytical Data (see attached sheet)

Samples Nos. 88-91 represent water collected from the wells and from various points on the distribution system. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that coliform organisms were not found in the 100 ml. samples examined.

It was observed that odors of petroleum product origin were evident both at the wells and at points on the system, indicating a continuation of the odor problem which developed during 1962.

Sanitary Defects Remaining -

1. There is a buried sewer located less than 50 feet from the old drilled well.
2. There are water mains and street sewers in the same trench.
3. There are water services and building sewers in the same trench.

Recommendations

1. In view of the unsatisfactory physical quality of the water, consideration should be given to obtaining water from a source which will be free from petroleum constituents. This can best be accomplished by relocating the well to an area remote from the village and sources of petroleum.

2. When a favorable opportunity occurs, the existing buried sewer lines of cast-iron construction located more than 30 feet but less than 40 feet from the old well should be reconstructed to provide extra protection for all joints.

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota
February 23, 1967

Date of last investigation - March 16, 1966

Rating at last investigation - 86

Changes since last investigation -

1. Water main extensions consisting of 1450 feet, 1440 feet and 330 feet of 8-inch, 6-inch and 4-inch cast-iron pipe together with 3 hydrants have been installed to service a new residential addition. The hydrants drain to gravel pockets.

2. A new water-works operator has been employed.

3. The fluoridation equipment remains out of service.

Analytical Data (see attached sheet)

Samples Nos. 97 - 100 represent water collected from the wells and from various points on the distribution system. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that coliform organisms were not found in the 100 ml. samples examined.

Sample No. 7115 represents water collected from the new well. The physical examination showed a water very low in turbidity, and no color was found. The chemical examination showed a hard water with a very low iron content and a low manganese content. The concentration of chlorides, sulphates and nitrate nitrogen was very low, and surfactant was not found in a significant concentration. The fluoride content was 0.31 milligrams per liter (mg/l) which is considerably below the range of 1.0 - 1.5 mg/l recommended for optimum control of dental caries. The actual pH and pH at stability were 7.5 indicating a stable water.

Sanitary Defects Remaining -

1. There is a buried sewer located less than 50 feet from the old drilled well.
2. There are water mains and street sewers in the same trench.
3. There are water services and building sewers in the same trench.

MINNESOTA DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

ANALYTICAL DATA

Samples Collected By A. J. Starin

Field Number	Town, County, Etc.	Sampling Point and Source of Sample				
97	Foley	Pumphouse Discharge Tap Old Well				
98	"	" " " New Well				
99	"	Court House Lav. Tap Distribution System				
100	"	Shell Sta. Lav. Tap " "				
7115	"	Pumphouse Discharge Tap New Well D				

This line for Lab use only.		a	b	c	d	e	f
Sample Number		97	98	99	100	7115	
Date Collected	2-23-67						
Time Collected							
Temperature °F							
Date Received by Lab.						2-28-67	
Bacteria per ml. 35° C. 24 hours							
Coliform group	M.P.N. per 100 ml.						
	M.F.C. per 100 ml.	0	0	0	0		
organisms	Fecal M.P.N. per 100 ml.						
Pres. <input type="checkbox"/> Con. <input type="checkbox"/> Comp. <input type="checkbox"/>							
leable solids ml. per liter							
Total Solids							
Total Volatile Matter							
Suspended Solids							
Suspended Volatile Matter							
Turbidity						1	
Color						0	
Total hardness as CaCO ₃						360	
Alkalinity as CaCO ₃						260	
pH value	Lab					7.5	
Iron						0.08	
Manganese						0.24	
Chlorides						19	
Residual Chlorine							
Sulphates						80	
Fluorides						0.31	
Dissolved Oxygen							
Biochemical Oxygen Demand	five-day						
Total Phosphorus							
Ammonia Nitrogen							
Organic Nitrogen							
Nitrite Nitrogen							
Nitrate Nitrogen						< 1	
Methylene Blue Active Substance as ABS						< .2	
Calcium as CaCO ₃						190	
pHs (50° F)						7.5	

* Results are in milligrams per liter except as noted.

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota
January 24th and March 27, 1968

Date of last investigation - February 23, 1967

Rating at last investigation - 86

Changes since last investigation -

The fluoridation equipment has been placed back in operation.

Analytical Data (see attached sheet)

Samples Nos. 11 through 14 represent water collected from the wells and from various points on the distribution system on January 24th. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that coliform organisms were not found in the 100 ml. samples examined.

Samples Nos. 2265 and 2266 represent water collected from the new well and a point on the distribution system on March 27th. The chemical examination of Sample No. 2265 showed a water very low in iron content. A determination for lead content showed an insignificant concentration of this element. The chemical examination of Sample No. 2266 showed a fluoride content of 1.4 milligrams per liter (mg/l) which is within the range of 1.0 - 1.5 mg/l recommended for optimum control of dental caries.

Sanitary Defects Remaining -

1. There is a buried sewer located less than 50 feet from the old drilled well.
2. There are water mains and street sewers in the same trench.
3. There are water services and building sewers in the same trench.

Recommendations

1. In view of the problem with the physical quality of the water, consideration should be given to obtaining water from a source which will be free from petroleum constituents. This can best be accomplished by relocating the well to an area remote

MINNESOTA DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
ANALYTICAL DATA

Samples Collected By A. J. Starin

Field Number	Town, County, Etc.	Sampling Point and Source of Sample					
11	Foley	Pumphouse discharge tap Old Well					
12	"	" " " New Well					
13	"	Court House Lavatory tap distribution system					
14	"	Brenny Shell Station Lav. tap " "					
2265	"	Pumphouse disch. tap New Well D					
2266	"	Court House Lav. tap distribution system					

This line for Lab use only. Sample Number	11 ^a	12 ^b	13 ^c	14 ^d	2265 ^e	2266 ^f
Date Collected	1-24-68	1-24-68	1-24-68	1-24-68	3-27-68	3-27-68
Time Collected					D	
Temperature °F						
Date Received by Lab.					4-3-68	4-3-68
Bacteria per ml. 35° C. 24 hours						
Coliform group						
M.P.N. per 100 ml.						
M.F.C. per 100 ml.	0	0	0	0		
Fecal M.P.N. per 100 ml.						
Pres. <input type="checkbox"/> Con. <input type="checkbox"/> Comp. <input type="checkbox"/>						
Soluble solids ml. per liter						
Total Solids						
Total Volatile Matter						
Suspended Solids						
Suspended Volatile Matter						
Turbidity						
Color						
Total hardness as CaCO ₃						
Alkalinity as CaCO ₃						
pH value						
Iron					0.03	
Manganese						
Chlorides						
Residual Chlorine						
Sulphates						
Fluorides						1.4
Dissolved Oxygen						
Biochemical Oxygen Demand { five-day						
Demand						
Total Phosphorus						
Ammonia Nitrogen						
Organic Nitrogen						
Nitrite Nitrogen						
Nitrate Nitrogen						
Methylene Blue Active Substance as ABS						
Calcium as CaCO ₃						
Lead (gasoline odors noted in water)					<.02	

* Results are in milligrams per liter except as noted.

3-26-69

MINNESOTA DEPARTMENT OF HEALTH
District VIII
Little Falls, Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota
January 29th and February 26, 1969

Date of last investigation - March 27, 1968

Rating at last investigation - 86

Changes since last investigation - None

Analytical Data (see attached sheet)

Samples Nos. 51 through 54 represent water collected from the wells and from various points on the distribution system on January 29th. The bacteriological examination showed the water to be of good sanitary quality as evidenced by the fact that coliform organisms were not found in the 100 ml. samples examined.

Samples Nos. 7761 and 60 represent water collected from the new well and a point on the distribution system on January 29th and February 26th, respectively. The chemical examination of Sample No. 7761 showed a water low in iron and very low in manganese content. The nitrate nitrogen content was very low. The fluoride content was 0.34 milligrams per liter (mg/l). The chemical examination of Sample No. 60 showed a fluoride content of 0.93 milligrams per liter (mg/l) which is slightly below the range of 1.0 - 1.5 mg/l recommended for optimum control of dental caries.

Sanitary Defects

1. There is a buried sewer located less than 50 feet from the old drilled well.
2. There are water mains and street sewers in the same trench.
3. There are water services and building sewers in the same trench.

Recommendations

1. In view of the problem with the physical quality of the water, consideration should be given to obtaining water from a source which will be free from petroleum constituents. This can best be accomplished by relocating the well to an area remote

MINNESOTA DEPARTMENT OF HEALTH
District Central
St. Cloud, Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota

1. Name of Water Supply System Foley Municipal Water Supply		2. Plant Classification D	
3. Telephone Number Clerk (office) 612-968-7260 Clerk (home) _____		Water Supt. (office) _____ Water Supt. (home) 968-6065	
4. Location (city, county) Foley, Benton County		5. Person Contacted Ed Doubek	
6. Water Superintendent and Classification Ed Doubek (C)		7. Population 1271	8. Date of Survey 1-27-76
9. Date of Previous Survey 8-1-74	10. Population Served 1271	11. Service Connections 460	12. Ownership Municipal
13. Source Ground	14. Plumbing Code <input type="checkbox"/> Adopted <input type="checkbox"/> Adopted with permits and inspections <input checked="" type="checkbox"/> Not adopted		
15. Storage (list separately, indicating capacity of each) 60,000 elevated			

16. Maximum Daily Consumption 200,000	17. Average Daily Consumption 145,000
18. Treatment Used	
<input type="checkbox"/> Disinfection	<input type="checkbox"/> Ammoniation
<input type="checkbox"/> Aeration	<input type="checkbox"/> Softening
<input type="checkbox"/> Filtration	<input type="checkbox"/> Sedimentation
<input type="checkbox"/> Coagulation	<input type="checkbox"/> Fluoridation
<input type="checkbox"/> Taste and Odor	<input type="checkbox"/> Corrosion Control and Stabilization
<input type="checkbox"/> Recarbonation	<input type="checkbox"/> Other (describe)

19. Well Data*	* I	* 2	** 3	4									
a) Well Number	I	2	3	4									
b) Year Installed		1949	1969	1971									
c) Casing Diameter			12	16									
d) Casing Depth			49	45									
e) Well Depth	58	67	60	55									
f) Screen Length			11	10									
g) Static Level			46	30									
h) Drawdown				37									
i) Pump (type & cap.)	VT 190	VT 210	VT 310	VT 250									

*Report well logs on separate sheet, if available.

* Out of service

** Not in use - standby

MINNESOTA DEPARTMENT OF HEALTH
District Central
St. Cloud, Minnesota

Report on Investigation of Municipal Water Supply
Foley, Minnesota

1. Name of Water Supply System <u>Foley Municipal Water Supply</u>		2. Plant Classification <u>D</u>	
3. Telephone Number Clerk (office) <u>612-968-7260</u> Water Supt. (office) _____ Clerk (home) _____ Water Supt. (home) <u>612-968-6065</u>			
4. Location (city, county) <u>Foley, Benton County</u>		5. Person Contacted <u>Ed Doubek</u>	
6. Water Superintendent and Classification <u>Ed Doubek (C)</u>		7. Population <u>1271</u>	8. Date of Survey <u>3-1-77</u>
9. Date of Previous Survey <u>1-27-76</u>	10. Population Served <u>1271</u>	11. Service Connections <u>460</u>	12. Ownership <u>Municipal</u>
13. Source <u>Ground</u>		14. Plumbing Code <input type="checkbox"/> Adopted <input checked="" type="checkbox"/> Adopted with permits and inspections <input type="checkbox"/> Not adopted	
15. Storage (list separately, indicating capacity of each) <u>60,000 elevated</u>			

16. Maximum Daily Consumption <u>200,000</u>	17. Average Daily Consumption <u>145,000</u>
---	---

18. Treatment Used	
<input type="checkbox"/> Disinfection	<input type="checkbox"/> Ammoniation
<input type="checkbox"/> Aeration	<input type="checkbox"/> Softening
<input type="checkbox"/> Filtration	<input type="checkbox"/> Sedimentation
<input type="checkbox"/> Coagulation	<input type="checkbox"/> Fluoridation
<input type="checkbox"/> Taste and Odor	<input type="checkbox"/> Corrosion Control and Stabilization
<input type="checkbox"/> Recarbonation	<input type="checkbox"/> Other (describe)

19. Well Data*	*	***	**											
a) Well Number	1	2	3	4										
b) Year Installed		1949	1969	1971										
c) Casing Diameter			12	16										
d) Casing Depth			49	45										
e) Well Depth	58	67	60	55										
f) Screen Length			11	10										
g) Static Level			46	30										
h) Drawdown				37										
i) Pump (type & cap.)	VT 190	VT 210	VT 310	VT 250										

*Report well logs on separate sheet, if available.
* Out of service **Not in use - standby ***Temporarily in use

MINNESOTA DEPARTMENT OF HEALTH

District CentralSt. Cloud, MinnesotaReport on Investigation of Municipal Water Supply
Foley, Minnesota

1. Name of Water Supply System <u>Foley Municipal Water Supply</u>		2. Plant Classification <u>D</u>	
3. Telephone Number Clerk (office) <u>612-968-7260</u> Water Supt. (office) <u>612-968-7260</u> Clerk (home) <u>612-387-3275</u> Water Supt. (home) <u>612-968-6065</u>			
4. Location (city, county) <u>Foley, Benton County</u>		5. Person Contacted <u>Ed Doubek</u>	
6. Water Superintendent and Classification <u>Ed Doubek</u> <u>C</u>		7. Population <u>1,271</u>	8. Date of Survey <u>1/8/80</u>
9. Date of Previous Survey <u>11/21/78</u>	10. Population Served <u>490</u>	11. Service Connections <u>490</u>	12. Ownership <u>Municipal</u>
13. Source <u>Ground Water</u>			
14. Plumbing Code <input type="checkbox"/> Adopted <input checked="" type="checkbox"/> Adopted with permits and inspections <input type="checkbox"/> Not adopted			
15. Storage (list separately, indicating capacity of each) <u>60,000 gallon elevated tank (existing)</u> <u>200,000 gallon elevated tank (under construction)</u>			
16. Maximum Daily Consumption <u>225,000 gallons</u>		17. Average Daily Consumption <u>179,000 gallons</u> <u>65.2MG (1979)</u>	
18. Treatment Used			
<input type="checkbox"/> Disinfection		<input type="checkbox"/> Ammoniation	
<input type="checkbox"/> Aeration		<input type="checkbox"/> Softening	
<input type="checkbox"/> Filtration		<input type="checkbox"/> Sedimentation	
<input type="checkbox"/> Coagulation		<input type="checkbox"/> Fluoridation Equipment - Hydrofluosilicic acid (at Well No. 4)	
<input type="checkbox"/> Taste and Odor		<input type="checkbox"/> Corrosion Control and Stabilization	
<input type="checkbox"/> Recarbonation		<input type="checkbox"/> Other (describe)	

C D E F

19. Well Data*	**	***	***																
a) Well Number	1	2	3	4															
b) Year Installed		1949	1969	1971															
c) Casing Diameter			12	16															
d) Casing Depth			49	45															
e) Well Depth	58'	67'	60	55															
f) Screen Length			11	10															
g) Static Level		11'	+3'	15'															
h) Drawdown				37															
i) Pump (type & cap.)		VT 210	VT 310	VT 250															

Actual rate 225 210

*Report well logs on separate sheet, if available.

** Disconnected from system.

*** Standby service.

HE-00842-02

[illegible]

MINNESOTA DEPARTMENT OF HEALTH																								
REPORT ON INVESTIGATION OF PUBLIC WATER SUPPLY																								
Name of Water Supply Foley Municipal Water Supply										PWS ID Number 1050001														
Street c/o Richard T. Zimmer, Clerk										Telephone Numbers:														
City Foley					State MN		Zip Code 56239			City: 612-968-7260														
County Benton					District Central					Operator: 612-968-7260														
Water Superintendent Ed Doubek					Classification C		Plant Classification D			Owner Type: Municipal														
Other Operators					Classification		Plant Type Community			Plumbing Permits and Inspections Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														
							Date of Previous Survey 9-22-82			Date of Survey 12-14-83														
City Engineer																								
SERVICE AREA CHARACTERISTICS:																								
<input checked="" type="checkbox"/> Municipal					<input type="checkbox"/> School or College					<input type="checkbox"/> Recreation Area														
<input type="checkbox"/> Mobile Home Park					<input type="checkbox"/> Hotel/Motel					<input type="checkbox"/> Campground														
<input type="checkbox"/> Company Town					<input type="checkbox"/> Resort					<input type="checkbox"/> Housing Development														
<input type="checkbox"/> Institution					<input type="checkbox"/> Restaurant					<input type="checkbox"/> Other														
Population Served 1980					Service Connections 500					Storage Capacity: (List Separately)														
Design Capacity (gal/day)					Average Daily Production (gal/day) 180,000					200,000 gal. elevated steel														
Emergency Capacity (gal/day)					Highest Daily Production (gal/day) 225,000					60,000 gal. elevated steel														
										Total: 260,000 gal.														
Source Name	Source Code	Availability	TREATMENT										WELL DATA											
			Disinfection	Aeration	Coagulation	Sedimentation	Filtration	Corrosion Con. Stabilization	Softening	Taste & Odor	Ammoniation	Fluoridation	Other	Year Installed	Casing Diameter	Casing Depth	Screen Length	Well Depth	Water Bearing Formation	Static Level	Drawdown	Turn Type		
Well #1	G	E												1949						Sand & Gravel	11		VT	225
Well #2	G	P										Va		1969	12"	49	11	60	Sand & Gravel	5		VT	310	
Well #3	G	P										Va		1971	16"	45	10	55	Sand & Gravel	15	37	VT	250	
Remarks:										Surveyed by: <i>David M. Schultz</i> David M. Schultz														
										Approved by: <i>James A. Feddema</i> James A. Feddema														

HE-00842-02

MINNESOTA DEPARTMENT OF HEALTH																							
REPORT ON INVESTIGATION OF PUBLIC WATER SUPPLY																							
Name of Water Supply Foley Municipal Water Supply										PWS ID Number 1050001													
Street c/o Richard T. Zimmer, Clerk										Telephone Numbers:													
City Foley					State MN		Zip Code 56239			City: 612-968-7260													
County Benton					District Central					Operator: 612-968-7260													
										Clerk Res. 612-387-3275													
										Op. Res. 612-968-6065													
Water Superintendent Ed Doubek					Classification C		Plant Classification D			Owner Type Municipal													
Other Operators Jim Moshier					Classification None		Plant Type Community			Plumbing Permits and Inspections Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No													
							Date of Previous Survey 12-14-83			Date of Survey 4-3-85													
City Engineer																							
SERVICE AREA CHARACTERISTICS:																							
<input checked="" type="checkbox"/> Municipal <input type="checkbox"/> School or College <input type="checkbox"/> Recreation Area <input type="checkbox"/> Mobile Home Park <input type="checkbox"/> Hotel/Motel <input type="checkbox"/> Campground <input type="checkbox"/> Company Town <input type="checkbox"/> Resort <input type="checkbox"/> Housing Development <input type="checkbox"/> Institution <input type="checkbox"/> Restaurant <input type="checkbox"/> Other																							
Population Served 1636					Service Connections 500					Storage Capacity: (List Separately)													
Design Capacity (gal/day)					Average Daily Production (gal/day) 193,000					200,000 gal. elevated steel													
Emergency Capacity (gal/day)					Highest Daily Production (gal/day) 341,000					60,000 gal. elevated steel													
										Total: 260,000 gal.													
Source Name	Source Code	Availability	TREATMENT										WELL DATA										
			Disinfection	Aeration	Coagulation	Sedimentation	Filtration	Corrosion Con. Stabilization	Softening	Taste & Odor	Ammoniation	Fluoridation	Other	Year Installed	Casing Diameter	Casing Depth	Screen Length	Well Depth	Water Bearing Formation	Static Level	Drawdown	Pump Type	
Well #1	G	E												1949						Sand & Gravel	11'		VT 225
Well #2	G	P											Va	1969	12"	49'	11'	60'		Sand & Gravel	5'		VT 310
Well #3	G	P											Va	1971	16"	45'	10'	55'		Sand & Gravel	15'	30'	VT 250
Remarks:										Surveyed by: David M. Schultz													
										Approved by: James A. Feddema													

HE-00842-02

MINNESOTA DEPARTMENT OF HEALTH
Section of Analytical Services

Budget No. _____

Date Collected 4-3-85

ORGANIC CHEMISTRY UNIT

Collected By David M. SchultzWATER ANALYSES ONLYDate Received 4-16-85

Report To _____

Sample Number	Field Number	Sample Location and/or Description (Town, County, etc.)	Containers: Type and Number	
12750	a	210A	Foley, Benton, Well #1	4-Vials
12751	b	211B	Foley, Benton, Well #2	4-Vials
	c			
	d			
	e			

This Line for LAB SAMPLE NUMBER ONLY.		12750	a	12751	b	c	d	e
Chlorophyll A	450							
Volatile Hydrocarbons	465							
Purgeable Aromatics	462							
Purgeable Halogenated	464							
Gasoline/Fuel Oil	463							
PAH	470							
Phenolic Compounds	480							
Phthalate Esters	490							
PCB's	420							
Herbicides	425							
2,4-D								
2,4,5-TP (Silvex)								
2,4,5-T								
Pesticides	421							
Lindane								
Methoxychlor								
Toxaphene								
Endrin								
Other Pesticides	422							
FIELD BLANK #:	36599							

D

E

MINNESOTA DEPARTMENT OF HEALTH
ENVIRONMENTAL LABORATORY

VOLATILE HYDROCARBONS IN WATER

SAMPLE NUMBER: 12750
FIELD BLANK #: 34599DATE SAMPLED: 04/03/85
DATE ANALYZED: 04/17/85
DATE PRINTED: 04/23/85

NDH COMMUNITY WATER SUPPLIES

NON-HALOGENATED (CODE 452)

ACETONE	10.0	UG/L	TETRAHYDROFURAN	5.0	UG/L
ETHYL ETHER	<	UG/L	METHYL ETHYL KETONE	<	5.0
BENZENE	<	UG/L	METHYL ISOBUTYL KETONE	<	1.00
TOLUENE	<	UG/L	ETHYL BENZENE	<	0.50
CUMENE	<	UG/L	O-XYLENE	<	0.50
M-XYLENE	<	UG/L	P-XYLENE	<	0.50

HALOGENATED (CODE 454)

CHLOROMETHANE	NO	DICHLORODIFLUOROMETHANE	NO
VINYL CHLORIDE <td>NO</td> <td>BROMOMETHANE <td>NO</td> </td>	NO	BROMOMETHANE <td>NO</td>	NO
CHLOROETHANE <td>NO</td> <td>DICHLOROFUOROMETHANE <td>NO</td> </td>	NO	DICHLOROFUOROMETHANE <td>NO</td>	NO
METHYLENE CHLORIDE <td><</td> <td>TRICHLOROFUOROMETHANE <td><</td> </td>	<	TRICHLOROFUOROMETHANE <td><</td>	<
ALLYLCHLORIDE <td><</td> <td>1,1-DICHLOROETHYLENE <td><</td> </td>	<	1,1-DICHLOROETHYLENE <td><</td>	<
1,1-DICHLOROETHANE <td><</td> <td>TRANS-1,2-DICHLOROETHYLENE <td><</td> </td>	<	TRANS-1,2-DICHLOROETHYLENE <td><</td>	<
CIS-1,2-DICHLOROETHYLENE <td><</td> <td>CHLOROFORM <td><</td> </td>	<	CHLOROFORM <td><</td>	<
1,2-DICHLOROETHANE <td><</td> <td>DIBROMOMETHANE <td><</td> </td>	<	DIBROMOMETHANE <td><</td>	<
1,1,1-TRICHLOROETHANE <td><</td> <td>CARBON TETRACHLORIDE <td><</td> </td>	<	CARBON TETRACHLORIDE <td><</td>	<
BROMODICHLOROMETHANE <td><</td> <td>DICHLOROCETONITRILE <td><</td> </td>	<	DICHLOROCETONITRILE <td><</td>	<
2,3-DICHLORO-1-PROPENE <td><</td> <td>1,2-DICHLOROPROPANE <td><</td> </td>	<	1,2-DICHLOROPROPANE <td><</td>	<
1,1-DICHLORO-1-PROPENE <td><</td> <td>TRANS-1,3-DICHLORO-1-PROPENE <td><</td> </td>	<	TRANS-1,3-DICHLORO-1-PROPENE <td><</td>	<
1,1,2-TRICHLOROETHYLENE <td><</td> <td>1,3-DICHLOROPROPANE <td><</td> </td>	<	1,3-DICHLOROPROPANE <td><</td>	<
CHLORODIBROMOMETHANE <td><</td> <td>1,1,2-TRICHLOROETHANE <td><</td> </td>	<	1,1,2-TRICHLOROETHANE <td><</td>	<
CIS-1,3-DICHLORO-1-PROPENE <td><</td> <td>1,2-DICHLOROETHANE <td><</td> </td>	<	1,2-DICHLOROETHANE <td><</td>	<
2-CHLOROETHYL VINYL ETHER <td><</td> <td>BROMOFORM <td><</td> </td>	<	BROMOFORM <td><</td>	<
1,1,1,2-TETRACHLOROETHANE <td><</td> <td>1,2,3-TRICHLOROPROPANE <td><</td> </td>	<	1,2,3-TRICHLOROPROPANE <td><</td>	<
1,1,2,2-TETRACHLOROETHANE <td><</td> <td>1,1,2,3-TETRACHLOROETHYLENE <td><</td> </td>	<	1,1,2,3-TETRACHLOROETHYLENE <td><</td>	<
PENTACHLOROETHANE <td><</td> <td>CHLOROBENZENE <td><</td> </td>	<	CHLOROBENZENE <td><</td>	<
1,1,2-TRICHLOROTRIFLUOROETHANE <td><</td> <td>1,3-DICHLOROBENZENE <td><</td> </td>	<	1,3-DICHLOROBENZENE <td><</td>	<
1,2-DICHLOROBENZENE <td><</td> <td>1,4-DICHLOROBENZENE <td><</td> </td>	<	1,4-DICHLOROBENZENE <td><</td>	<

NO "QUALITATIVE ANALYSIS ONLY"

* "PRIORITY POLLUTANT"

< "LESS THAN"

MINNESOTA DEPARTMENT OF HEALTH
ENVIRONMENTAL LABORATORY

VOLATILE HYDROCARBONS IN WATER

SAMPLE NUMBER: 12751
FIELD BLANK #: 36599DATE SAMPLED: 04/03/85
DATE ANALYZED: 04/17/85
DATE PRINTED: 04/23/85

MCH COMMUNITY WATER SUPPLIES

NON-HALOGENATED (CODE 462)

ACETONE	10.0	UG/L	TETRAHYDROFURAN	5.0	UG/L
ETHYL ETHER	<	1.0	METHYL ETHYL KETONE	<	5.0
BENZENE	<	0.50	METHYL ISOBUTYL KETONE	<	1.00
TOLUENE	<	0.50	ETHYL BENZENE	<	0.50
CUMENE	<	0.50	O-XYLENE	<	0.50
M-XYLENE	<	0.50	P-XYLENE	<	0.50

HALOGENATED (CODE 464)

CHLOROMETHANE	NQ	DICHLORODIFLUOROMETHANE	NQ
VINYL CHLORIDE	NQ	BROMOMETHANE	NQ
CHLOROETHANE	NQ	DICHLOROFUOROMETHANE	NQ
METHYLENE CHLORIDE	<	1.0	UG/L
ALLYLCHLORIDE	<	0.50	UG/L
1,1-DICHLOROETHANE	<	0.20	UG/L
CIS-1,2-DICHLOROETHYLENE	<	0.20	UG/L
1,2-DICHLOROETHANE	<	0.20	UG/L
1,1,1-TRICHLOROETHANE	<	0.20	UG/L
BROMODICHLOROMETHANE	<	0.50	UG/L
2,3-DICHLORO-1-PROPENE	<	0.20	UG/L
1,1-DICHLORO-1-PROPENE	<	0.20	UG/L
1,1,2-TRICHLOROETHYLENE	<	0.20	UG/L
CHLORODIBROMOMETHANE	<	1.0	UG/L
CIS-1,3-DICHLORO-1-PROPENE	<	0.20	UG/L
2-CHLOROETHYL VINYL ETHER	<	1.0	UG/L
1,1,1,2-TETRACHLOROETHANE	<	0.20	UG/L
1,1,2,2-TETRACHLOROETHANE	<	2.0	UG/L
PENTACHLOROETHANE	<	2.0	UG/L
1,1,2-TRICHLOROTRIFLUOROETHANE	<	0.50	UG/L
1,2-DICHLOROBENZENE	<	1.0	UG/L

NQ "QUALITATIVE ANALYSIS ONLY"

* "PRIORITY POLLUTANT"

< "LESS THAN"

MINNESOTA DEPARTMENT OF HEALTH																						
REPORT ON INVESTIGATION OF PUBLIC WATER SUPPLY																						
Name of Water Supply Foley Municipal Water Supply										PWS ID Number 1050001												
Street c/o Richard T. Zimmer, Clerk										Telephone Numbers:												
City Foley										State MN		Zip Code 56239			City: (612) 968-7260							
County Benton										District Central		Operator: (612) 968-7260			Clerk Res. (612) 387-3275							
Water Superintendent Ed Doubek										Classification C		Plant Classification D			Owner Type Municipal							
Other Operators Jim Moshier										Classification D		Plant Type Community			Plumbing Permits and Inspections Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
										Date of Previous Survey 4/3/1985			Date of Survey 6/18/1986									
City Engineer																						
SERVICE AREA CHARACTERISTICS:																						
<input checked="" type="checkbox"/> Municipal <input type="checkbox"/> School or College <input type="checkbox"/> Recreation Area <input type="checkbox"/> Mobile Home Park <input type="checkbox"/> Hotel/Motel <input type="checkbox"/> Campground <input type="checkbox"/> Company Town <input type="checkbox"/> Resort <input type="checkbox"/> Housing Development <input type="checkbox"/> Institution <input type="checkbox"/> Restaurant <input type="checkbox"/> Other																						
Population Served 1636					Service Connections 500					Storage Capacity: (List Separately)												
Design Capacity (gal/day)					Average Daily Production (gal/day) 173,000					200,000 gal. elevated steel												
Emergency Capacity (gal/day)					Highest Daily Production (gal/day) 339,000					60,000 gal. elevated steel *												
Total: 260,000 gal.																						
Source Name	Source Code	Availability	TREATMENT										WELL DATA									
			Disinfection	Aeration	Coagulation	Sedimentation	Filtration	Corrosion Con. Stabilization	Softening	Taste & Odor	Ammoniation	Fluoridation	Other	Year Installed	Casing Diameter	Casing Depth	Screen Length	Well Depth	Water Bearing Formation	Static Level	Drawdown	Pump Type
Well #1	G	E												1949					Sand & Gravel	11'		VT
Well #2	G	P												Va 1969	12"	49'	11'	60'	Sand & Gravel	Free Flowing		VT
Well #3	G	P												Va 1971	16"	45'	10'	55'	Sand & Gravel		5' 19'	VT
Remarks:																						
*Used for summer fire protection only																						
Surveyed by: David M. Schultz																						
Approved by: James W. Feddema																						

MINNESOTA DEPARTMENT OF HEALTH
REPORT ON INVESTIGATION OF PUBLIC WATER SUPPLY

[illegible]

Minnesota Unique Well No.

240768

County Benton
 Quad Foley
 Quad ID 155B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 09/15/1992
 Update Date 03/10/2014
 Received Date

Well Name FOLEY 3 Township Range Dir Section Subsections Elevation 1114 ft. 37 29 W 36 BBBBAC Elevation Method 7.5 minute topographic map (+/- 5 feet)		Well Depth 55 ft. Depth Completed 55 ft. Date Well Completed 00/00/1971
Well Address FOLEY MN 56329		Drilling Method --
Geological Material NO RECORD Color Hardness From 0 To 55		Drilling Fluid -- Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From Ft. to Ft. Use Community Supply PWS ID 1050001 Source S03 Casing Type Steel (black or low carbon) Joint No Information Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No No Above/Below 1 ft. Casing Diameter 16 in. to 45 ft. Weight lbs./ft. Hole Diameter Open Hole from ft. to ft. Screen YES Make Type Diameter Slot/Gauze Length 10 Set Between 45 ft. and 55 ft. Static Water Level 15 ft. from Land surface Date Measured 00/00/1971 PUMPING LEVEL (below land surface) ft. after hrs. pumping g.p.m. Well Head Completion Pitless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)
NO REMARKS Located by: Minnesota Department of Health Method: GPS SA Off (averaged) Unique Number Verification: N/A Input Date: 02/02/2007 System: UTM - Nad83, Zone15, Meters X: 429588 Y: 5056869		Grouting Information Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Specified Nearest Known Source of Contamination feet direction type Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No Pump <input type="checkbox"/> Not Installed Date Installed Manufacturer's name Model number HP Volts Length of drop Pipe ft. Capacity g.p.m. Type Turbine Material
First Bedrock Last Strat sand +larger Aquifer Quat. Buried Artes. Aquifer Depth to Bedrock ft.		Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No Well Contractor Certification Minnesota Department of Health MDH License Business Name Lic. Or Reg. No. Name of Driller
County Well Index Online Report		240768 Printed 2/4/2015 HE-01205-07

Minnesota Unique Well No.

721698

County	Benton
Quad	Foley
Quad ID	155B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes Chapter 103I

Entry Date	
Update Date	03/10/2014
Received Date	05/02/2005

Well Name FOLEY 4					Well Depth		Depth Completed		Date Well Completed			
Township Range Dir Section Subsections Elevation					60 ft.		60 ft.		02/28/2005			
37 29 W 26 DBABCD Elevation Method					7.5 minute topographic map (+/- 5 feet)							
Well Address BROADWAY AV FOLEY MN 56329					Drilling Fluid --		Well Hydrofractured? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No From Ft. to Ft.					
Geological Material CLAY/ROCKS SAND/GRAVEL ROCK SAND/GRAVEL Color BROWN BROWN BLK/WHT BROWN Hardness MEDIUM SOFT HARD MEDIUM From To 0 35 35 37 37 38 38 60					Use Community Supply PWS ID 1050001 Source S04							
					Casing Type Steel (black or low carbon) Joint Welded Drive Shoe? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No No Above/Below 1 ft.							
					Casing Diameter		Weight		Hole Diameter			
					12 in. to 50 ft.		49.56 lbs./ft.		12 in. to 60 ft.			
					Open Hole from ft. to ft.							
					Screen YES Make JOHNSON Type stainless steel							
					Diameter		Slot/Gauze		Length		Set Between	
					12		60		12		48 ft. and 60 ft.	
					Static Water Level 21.67 ft. from Land surface Date Measured 02/28/2005							
					PUMPING LEVEL (below land surface) 32 ft. after 12 hrs. pumping 200 g.p.m.							
REMARKS DRILLERS: DAN POHLKAMP & BUTCH GAUSTAD.					Well Head Completion Pitless adapter manufacturer Model <input checked="" type="checkbox"/> Casing Protection Y <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)							
Located by: Minnesota Department of Health Unique Number Verification: N/A System: UTM - Nad83, Zone15, Meters Method: GPS SA Off (averaged) Input Date: 02/07/2005 X: 428970 Y: 5057660					Grouting Information Well Grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Specified							
					Nearest Known Source of Contamination 300 feet N direction Septic tank/drain field type Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
					Pump <input type="checkbox"/> Not Installed Date Installed Manufacturer's name Model number HP Volts Length of drop Pipe ft. Capacity g.p.m. Type Material							
					Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
First Bedrock Last Strat sand +larger-brown Aquifer Quat. Buried Artes. Aquifer Depth to Bedrock ft.					Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
					Well Contractor Certification Traut, Mark J. Wells 73646 DAN/BUTCH License Business Name Lic. Or Reg. No. Name of Driller							
					County Well Index Online Report							
					721698		Printed 2/4/2015 HE-01205-07					

Minnesota Unique Well No.

777222

County Benton
 Quad Foley
 Quad ID 155B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 10/28/2010
 Update Date 03/10/2014
 Received Date 11/15/2010

Well Name FOLEY 5 Township Range Dir Section Subsections Elevation 1155 ft. 37 29 W 33 ADDABA Elevation Method 7.5 minute topographic map (+/- 5 feet)		Well Depth 110 ft. Depth Completed 108 ft. Date Well Completed 10/07/2010 Drilling Method Non-specified Rotary
Well Address 6089 105TH AV NE FOLEY MN 56320		Drilling Fluid Qwik gel Well Hydrofractured? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No From Ft. to Ft.
Geological Material SILT CLAY W/ROCKS GRAVEL BEDROCK		Color BROWN GRAY VARIED BLACK Hardness SOFT HARD HARD HARD From 0 10 90 108 To 10 90 108 108
		Use Community Supply PWS ID Source Casing Type Steel (black or low carbon) Joint No Information Drive Shoe? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Above/Below ft.
		Casing Diameter 12 in. to 94 ft. Weight 51 lbs./ft. Hole Diameter 18.75 in. to 110 ft.
		Open Hole from ft. to ft. Screen YES Make JOHNSON-HI-FLOW Type stainless steel
		Diameter 12 Slot/Gauze 90 Length 16 Set Between 92 ft. and 108 ft.
		Static Water Level 3 ft. from Land surface Date Measured 01/07/2010
		PUMPING LEVEL (below land surface) 36.7 ft. after 24 hrs. pumping 650 g.p.m.
		Well Head Completion Pitless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)
REMARKS GAMMA LOGGED 10-25-2010. LOGGED BY JIM TRAEEN. WELL NO. 5--TEST WELL ON SITE TO BE ABANDONED Located by: Minnesota Department of Health Method: GPS SA Off (averaged) Unique Number Verification: Info/GPS from data source Input Date: 09/28/2010 System: UTM - Nad83, Zone15, Meters X: 426216 Y: 5056347		Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified Grout Material: Neat Cement from to 84 ft. 60 bags
		Nearest Known Source of Contamination feet direction type Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No
		Pump <input checked="" type="checkbox"/> Not Installed Date Installed 11/09/2010 Manufacturer's name GRUNDFOS Model number 3855200-3A HP 20 Volts 460 Length of drop Pipe 63 ft. Capacity 340 g.p.m. Type Submersible Material
		Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Borehole Geophysics Yes First Bedrock Foley Granite Aquifer Quat. Buried Artes. Aquifer Last Strat Foley Granite Depth to Bedrock 107 ft.		Well Contractor Certification Major Drilling 2896 THILQUIST, J License Business Name Lic. Or Reg. No. Name of Driller
County Well Index Online Report		777222 Printed 2/4/2015 HE-01205-07

ALTERNATIVE WATER SUPPLY; CONTINGENCY STRATEGY

Minnesota Rules 4720.5280

I. PURPOSE

The purpose of this Contingency Plan is to establish, provide and keep updated, certain emergency response procedures and information for the City of Foley which may become vital in the event of a partial or total loss of public water supply services as a result of natural disaster, chemical contamination, or civil disorder of human-caused disruptions.

II. PUBLIC WATER SUPPLY CHARACTERISTICS

A. CURRENT SUPPLY SOURCE

The City of Foley water utility supplies water to the residents within the city limits. The system uses three wells finished into the Glacial Drift Aquifer. Below is a table with particular characteristics of each well.

	Well Number 3	Well Number 4	Well Number 5
Unique Well Number	204768	721698	777222
Well Depth (ft.)	55	60	108
Well Diameter (in.)	16	12	12
Well Production (gpm)	175 gpm	245 gpm	390 gpm

B. TREATMENT

The City of Foley utilizes chlorine and fluoride treatment with polyphosphate.

C. STORAGE AND DISTRIBUTION

The city operates one storage facility – one 120-foot tall tower with 200,000 gallon capacity.

The water system contains 865 service connections. The majority of the main part of the system is looped with some dead-ends on the outer development.

D. MAPS/PLANS

The City of Foley has up to date maps of our water and sewer infrastructure. These maps are available at the City of Foley Public Works Department along with on our Arc View system at both the Public Works Department and City Hall.

III. PRIORITY OF WATER USERS DURING WATER SUPPLY EMERGENCY

Water Use Category	Maximum daily use (gpd)	Minimum daily use (gpd)
Residential	148,100.7	104,503.1
Commercial	36,966.1	30,543.8
Industrial	57,388.8	47,770.2
Public	25,581.0	19,458.1

IV. ALTERNATIVE WATER SUPPLY OPTIONS

A. SURFACE WATER SOURCES AND TREATMENT NEEDS

No surface water is available in the immediate area.

B. BOTTLED WATER SUPPLIES, DELIVERY AND DISTRIBUTION.

The following vendor can be contacted to provide bottled water supply in the event of an emergency. These vendors are capable of providing bulk, bottled water in five-gallon containers. Truckload and pallet quantities are usually on hand and available.

Vendor: Bernicks Pepsi, St. Cloud, MN
 Phone: 1-800-627-0287
 Fax: 320-656-2121

C. SYSTEM INTERCONNECTS WITH OTHER WATER SUPPLIES

There are no options for the City of Foley system to interconnect with an existing potable water system.

D. NEW WELL

The City of Foley would contract with a well driller that could potentially drill an emergency well if necessary.

E. EMERGENCY OR BACKUP WELLS

The City of Foley has three wells and can pump from any well on an alternating basis if necessary or strictly from one well.

F. EMERGENCY TREATMENT OF WATER SYSTEM

N/A

G. SOURCE MANAGEMENT (BLENDING)

The city has no option for blending of different water supplies.

V. INVENTORY OF AVAILABLE EMERGENCY EQUIPMENT AND MATERIALS

Description	Owner	Telephone	Location
Well Repair	Werner Well	320-274-3856	Annandale, MN
Pump Repair	Werner Well	320-274-3856	Annandale, MN
Electrician	Kroska Electric	320-968-7377	Foley, MN
Electrician	Jesok Electric	320-387-3280	Rice, MN
Plumber	El-Jay Plumbing&Htg.	320-251-8330	St. Cloud, MN
Backhoe	Johnson Excavating	320-968-7862	Foley, MN
Backhoe	Molitor Excavating	320-252-8010	St. Cloud, MN
Chemical Feed	Hawkins Water Treatment	612-331-6910	Minneapolis, MN
Meter Repair	William E Young Co.	651-644-2294	St. Paul, MN
Generator	Ziegler Power Systems	800-320-4292	Shakope, MN
Valves	Ferguson Waterworks	800-844-8344	Blaine, MN
Water Tower	Maguire Iron	605-334-9749	Sioux Falls, SD

VI. NOTIFICATION PROCEDURES

A. LEAD COORDINATING AGENCY

Water System Personnel	Name	Home Telephone	Work Telephone
Mayor/Board Chair	Dave Mosford	320-968-7178	320-968-7944
Council Members	Brian Weis	320-492-2768	N/A
Council Members	Leslie LeCuyer	320-968-6613	N/A
Council Members	Gerard Bettendorf	320-968-7718	N/A
Council Members	Kris Dumonceaux	320-968-7094	320-492-2150
State Incident Duty Officer	N/A	N/A	800-422-0798
County Emergency Director	Jim McDermott	320-309-6308	320-968-8105
Fire Chief	Mark Pappenfus	320-968-6640	320-250-6415
Sheriff	Troy Heck	N/A	320-968-7201
System Operator	Mark Pappenfus	320-968-6640	320-290-9186
School Superintendent	Darrin Strosahl	N/A	320-968-7175
Ambulance	Gold Cross	N/A	320-251-2825
Hospital	St. Cloud Hospital	N/A	320-251-2700
Power Company	Xcel Electric	N/A	800-771-7300
Power Company	East Central Energy	N/A	800-254-7944
Highway Department	Benton County	N/A	320-968-5051
Telephone Company	Century Link	N/A	800-251-7056
Neighboring Water System	Sauk Rapids	N/A	320-253-7780
MRWA Technical Services	Kyle Kedrowski	N/A	800-367-3792
MDH Public Water Supply	Jon Groethe	N/A	320-650-1073
MDH SWP Planner	George Minerich	N/A	320-223-7314

B. INCIDENT ASSESSMENT TEAM

Responsible Party	Name	Home Phone	Work Phone
Mayor/Board Chair	Dave Mosford	320-968-7178	320-968-7944
Council Members	Brian Weis	320-492-2768	N/A
Council Members	Leslie LeCuyer	320-968-6613	N/A
Council Members	Gerard Bettendorf	320-968-7718	N/A
Council Members	Kris Dumonceaux	320-968-7094	320-492-2150
Fire Chief	Mark Pappenfus	320-968-6640	320-250-6415
Sheriff	Troy Heck	N/A	320-968-7201
County Emergency Dir.	Jim McDermott	320-309-6308	320-968-8105
Hazardous Materials Response	Foley Fire Department	N/A	320-968-7123
System Operator	Mark Pappenfus	320-968-6640	320-290-9186

C. Public Information Plan

- 1. Primary spokesperson for the media and/or public comment in the event of an emergency or contamination incident.**

Name: Robert Barbian
Title: City Administrator
Address: Foley, MN

Mark Pappenfus
Public Works Director
Foley, MN

Home Phone: 715-497-5262 (cell)
Work Phone: 320-968-7260

320-290-9186 (cell)
320-968-6640

Public Information Center Location during Emergency: City Hall

Times Available: As required

- 2. In accordance with the City of Foley's Emergency Management Plan, below is the information checklist to be conveyed to the public media:**

Name of water system: _____

Contaminant of concern and date: _____

Source of contamination: _____

Public health hazard: _____

Steps the public can take: _____

Steps the water system is taking: _____

Other information: _____

3. Media Contacts

Media	Name	Telephone	Address
Newspaper	Benton County News	320-968-7220	Foley, MN
Newspaper	St. Cloud Times	320-255-8700	St. Cloud, MN
Radio	WJON	320-251-4422	St. Cloud, MN
TV			

VII. MITIGATION AND CONSERVATION

A. MITIGATION

- 1. Infrastructure maintenance/upgrades/maps:** The City of Foley does semi-annual flushing and valve turning, along with hydrant repair and painting as needed. As upgrades are done to the system, maps are updated and reprinted.
- 2. Regular inspection of tower, well, pump house:** The City wells are inspected bi-weekly. The water tower is inspected weekly or on an as needed basis. The City contracts for a complete water tower inspection every 5-7 years.
- 3. Staff emergency training:**
- 4. Site new backup well:** There are no current plans for a new well, however a new well will be considered if potential contaminants in Well Number 4 require mitigation in the future.
- 5. System valving to isolate problems:** The City's emergency books, offices, and Arc View Systems all have maps that show locations of main hydrant and service valves.
- 6. Sanitation procedures for construction/repairs:** Shock chlorination by contractor is undertaken after the completion of any new construction or repairs. The area is then flushed and sampled for coliform bacteria.

B. CONSERVATION

- 1. Water Meters:** Water meters are installed when service is turned on and read on a quarterly basis. The utility can track water use by connection.
- 2. Public Education:** A Consumer Confidence Report is provided annually to residents.
- 3. Rate Structure:** Minimum rate is \$33.60 for up to 7,000 Gallons. Excess over 7,000 Gallons is charged at \$0.48 per 100 Gallons. Bulk water Rate is \$1.00 per 100 Gallons of water.

CITY OF FOLEY - WHP IMPLEMENTATION SCHEDULE

NOTE: 1) For a complete description of each strategy, refer to the WHP Plan, Chapter 5.

2) Year 1 starts 60 days after final plan approval is received from MDH.

**on-going
or as**

**COMPLETION
DATE**

[illegible]

Glossary of Terms

Data Element. A specific type of information required by the Minnesota Department of Health to prepare a wellhead protection plan.

Drinking Water Supply Management Area (DWSMA). The surface and subsurface areas surrounding a public water supply well, including the wellhead protection area, that must be managed by the entity identified in the wellhead protection plan. (Minnesota Rules, part 4720.5100, subpart 13). This area is delineated using identifiable landmarks that reflect the scientifically calculated wellhead protection area boundaries as closely as possible.

Emergency Response Area (ERA). The part of the wellhead protection area that is defined by a one-year time of travel within the aquifer that is used by the public water supply well (Minnesota Rules part 4720.5250, subpart 3). It is used to set priorities for managing potential contamination sources within the DWSMA.

Emergency Standby Well. A well that is pumped by a public water supply system only during emergencies, such as when an adequate water supply cannot be achieved because one or more primary or seasonal water supply wells cannot be used.

Inner Wellhead Management Zone (IWMZ). The land that is within 200 feet of a public water supply well (Minnesota Rules, part 4720.5100, subpart 19). The public water supplier must manage the IWMZ to help protect it from sources of pathogen or chemical contamination that may cause an acute health effect.

Nonpoint Source Contamination. Refers to contamination of the drinking water aquifer that is caused by polluted runoff or pollution sources that cannot be attributed to a specifically defined origin, e.g., runoff from agricultural fields, feedlots, or urban areas.

Point Source Contamination. Refers to contamination of the drinking water aquifer that is attributed to pollution arising from a specifically defined origin, such as discharge from a leaking fuel tank, a solid waste disposal site, or an improperly constructed or sealed well.

Primary Water Supply Well. A well that is regularly pumped by a public water supply system to provide drinking water.

Seasonal Water Supply Well. A well that is only used to provide drinking water during certain times of the year, either when pumping demand cannot be met by the primary water supply well(s) or for a facility, such as a resort, that is closed to the public on a seasonal basis.

Vulnerability. Refers to the likelihood that one or more contaminants of human origin may enter either 1) a water supply well that is used by the public water supplier or 2) an aquifer that is a source of public drinking water.

WHP Area (WHPA). The surface and subsurface area surrounding a well or well field that supplies a public water system, through which contaminants are likely to move toward and reach the well or well field (Minnesota Statutes, part 103I.005, subdivision 24).

WHP Plan Goal. An overall outcome of implementing the WHP plan, e.g., providing for a safe and adequate drinking water supply.

WHP Measure. A method adopted and implemented by a public water supplier to prevent contamination of a public water supply, and approved by the Minnesota Department of Health under Minnesota Rules, parts 4720.5110 to 4720.5590.

WHP Plan Objective. A capability needed to achieve one or more WHP goals, e.g., implementing WHP measures to address high priority potential contamination sources within 5 years.